ASSESSORS' HANDBOOK
SECTION 541

ASSESSMENT OF PUBLIC UTILITIES

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Reprint Note

This manual was previously unnumbered with the title *The Appraisal of Public Utilities*. It has been numbered AH 541, and renamed *Assessment of Public Utilities*.

This manual has been reprinted with a new format and minor corrections for spelling and math errors. The text of the manual has not changed from the prior edition. It has **not** been edited for changes in law, court cases or other changes since the original publication date.

FOREWORD

This handbook was prepared to describe the principles and procedures used by the California State Board of Equalization and its staff in the valuation of properties of public utilities and railroads for assessment purposes. The concepts expressed here are for the purpose of assisting the appraiser in making annual market value estimates under the unit rule for utility and railroad property subject to government regulation.

In June of 1978 the Board of Equalization concluded that the value limiting features of Proposition 13 (Article XIIIA of the State Constitution) did not apply to state-assessed property. This issue is presently in litigation. Consequently, application of that law to utility and railroad property is not discussed herein.

The handbook also contains an explanation of the allocation procedures used by the Board to allocate values between states and among the many taxing districts within this state.

This handbook was approved by the Board on May 20, 1981.

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May, 1981

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CHAPTER 1: VALUE CONCEPT

BASIS FOR TAXATION

The Constitution of the State of California provides for the ad valorem taxation of state-assessed property in Article XIII, Section 19:

> The Board shall annually assess (1) pipelines, flumes, canals, ditches, and aqueducts lying within 2 or more counties and (2) property, except franchises, owned or used by regulated railway, telegraph, or telephone companies, car companies operating on railways in the State, and companies transmitting or selling gas or electricity. This property shall be subject to taxation to the same extent and in the same manner as other property.
>
> No other tax or license charge may be imposed on these companies which differs from that imposed on mercantile, manufacturing, and other business corporations. This restriction does not release a utility company from payments agreed on or required by law for a special privilege or franchise granted by a government body.
>
> The Legislature may authorize Board assessment of property owned or used by other public utilities.
>
> The Board may delegate to a local assessor the duty to assess a property used but not owned by a state assessee on which the taxes are to be paid by a local assessee.

This Constitutional provision established the State Board of Equalization as the assessor of the above described properties and provides that these properties, other than general franchises, shall be subject to taxation to the same extent and manner as other property.

MARKET VALUE

Article XIII, Section 1 of the Constitution reads in part:

> ...All property is taxable and shall be assessed at the same percentage of fair market value.

Fair market value or market value has been defined by the courts many different times. The leading California decision states:

> It provides, in other words, for an assessment at the price that property would bring to its owner if it were offered for sale on an open market under conditions in which neither buyer nor seller could take advantage of the exigencies of the other. It is a measure of desirability translated into money amounts...[1]

[1] *De Luz Homes, Inc.* v. *County of San Diego* (1955), 45 Cal. 2d 546.

The California Revenue and Taxation Code defines value in section 110:

> Except as is otherwise provided in Section 110.1, 'full cash value' or 'fair market value' means the amount of cash or its equivalent which property would bring if exposed for sale in the open market under conditions in which neither buyer nor seller could take advantage of the exigencies of the other and both with knowledge of all of the uses and purposes to which the property is adapted and for which it is capable of being used and of the enforceable restrictions upon those uses and purposes.

The Constitution, statutes and court decisions provide for the assessment of state-assessed property on the basis of its market value. For a more complete discussion of market value, the reader is referred to the State Board of Equalization's Assessors' Handbook Section 501, *General Appraisal Manual*, March, 1975.

PROPERTY RIGHTS TO BE ASSESSED

In property taxation, it is customary to think of tangible assets as the subject of the tax, and intangibles as exempt from property taxation. Article XIII, section 2 of the Constitution specifies that certain intangibles may be assessed, and the courts have held that the enumeration of specific taxable intangibles by implication excludes from taxation all other items of intangible property.[2]

However, it can be argued that assessable property consists of nothing more than intangible property rights. Richard U. Ratcliff, in his book *Urban Land Economics* explains property as follows:

> The real estate market deals in rights, not directly in land and buildings that are property objects. In an outright sale of land, full ownership involving a complex of rights is the economic good that changes hands. These rights, and the legal limitations that define them, are constituents of the social institution of property.

It is clear that under this premise, intangible rights are the essence of value. If this were not so, property objects to which these rights attach would have no value. For example, the property objects that make up a railroad would have no value as a railroad without the complex of rights that make the railroad operable.

Michael Todd Co. v. *Los Angeles County* (1962), 57 Cal. 2d 684, is a landmark case dealing with the interrelation between tangible property and intangible property rights for ad valorem tax purposes. It reads in part:

> Intangible values, however, that cannot be separately taxed as property may be reflected in the valuation of taxable property. Thus, in determining the value of property, assessing authorities may take into consideration earnings derived

[2] *Roehm* v. *Orange County* (1948) 32 Cal. 2d 280.

> therefrom, which may depend upon the possession of intangible rights and privileges that are not themselves regarded as a separate class of taxable property...

The Todd case established the principle that intangible interests that cannot be separately taxed as property may be reflected in the value of taxable tangible property. This principle was recently reiterated in *ITT World Communications, Inc.* v. *Santa Clara County* (1980), 101 Cal. App. 3d 246, which pertained specifically to the valuation of state-assessed property.

In practice, usually there is no way to distinguish and value separately benefits attributable to intangibles and benefits attributable to tangible properties. Furthermore, tangible properties without recognized intangible use rights are valueless since value arises from putting property to beneficial and/or productive use. For property tax purposes then, the concept of property is one which encompasses all expectancies and opportunities to derive income which occur because of the ownership of tangible properties. This concept must be qualified whenever it is possible to distinguish and value separately the income expectancies of intangibles.

Article XIII, section 19 of the Constitution, exempts general franchises from ad valorem taxation. Such a franchise is the general right to do business in California as a corporation, which is a privilege subject to taxation pursuant to article XIII, section 27 of the Constitution. The tax on this general franchise is commonly referred to as the Bank and Corporation Tax. While the Constitution prohibits a direct property tax assessment of the general franchise, the ITT decision held that the assessment of the taxpayer's taxable property may take into account earnings from the property that depend upon the taxpayer's possession of a franchise.

A special franchise, usually evidenced by a certificate of public necessity and convenience for a railroad or public utility to perform certain services in a designated area, is also an intangible right. Such a right is indispensable for the use of the property for the purpose for which it was intended. See, for example, *Stockton Gas and Electric Co.* v. *San Joaquin County* (1905), 148 Cal. 313, wherein the court held that the franchise of a gas and electric company to erect poles in or along streets is a taxable right. The value of this intangible right is inseparable from the total value of the property and is included in the Board's assessment pursuant to Revenue and Taxation Code section 23154.

VALUATION BY UNIT RULE

Public utilities and railroads own and use vast quantities of tangible assets which are located in many counties and sometimes in other states. All of the tangible assets subject to property taxation must be valued. To do this, physical assets are grouped together as a unit or units.

UNIT CONCEPT

The unit concept means that a collection of tangible assets functioning as an operating unit are to be appraised as a whole without reference to the separate value of the component parts. Value accrues to the assets because of their ability to generate benefits as an operating unit.

Considerable material has been written on the subject of unitary valuation, but it is best summarized as follows:

> The essence of the unitary valuation concept is the determination of the value of an enterprise as a whole without regard to the value of the individual assets making up the enterprise. As its starting premise, the concept assumes that it is meaningless to consider the value of a mile of track, a substation, or a reel of cable standing apart from the entire operating system. The unit value of the enterprise may be either more or less than the total value of the individual assets making up the whole. Presumably, if each asset were sold separately, the total price received would be substantially less than the value of the enterprise as a going concern. This becomes more apparent when it is considered that ten miles of underground cable has a questionable worth, other than a minimal scrap value, if there is no generating plant at one end to provide electricity and no source at the other end to receive electrical energy. Similarly, fifty miles of railroad track, standing alone, are of questionable utility without the rest of the system. It was once asked facetiously what was the value of the left hind leg of a horse if divorced from the horse. The answer of course, is obvious unless we are interested in horsemeat.[3]

As a matter of law the unit concept is particularly appropriate when the assessment function is performed by a central agency. In *Southern California Telephone Company* v. *Los Angeles County* (1941) 45 Cal. App 2d. 111, the court held*:*

> ...the power to assess public utility property is placed exclusively in the hands of the Board of Equalization as a sole, central assessing agency. This is significant, because it is the common function of central assessing agencies to evaluate such property as a whole in order to assure the assessment of those values which cling to the entire property as a unit, and in order to assure the assessment of the same type of property at uniform value throughout the state. These are the reasons for central assessment of appellant's property as distinguished from local assessment thereof in all of the fifty-eight different counties. The law recognizes that where a central agency is given the duty to assess public utility property while other property is assessed by local officers, the very fact of such segregation bespeaks an intention that the central assessment might be different from the values of the local assessor.

[3] Louis G. Bertane, *The Assessments of Public Utility Property in California*, 20 UCLA Law Review 419.

Under the unit concept, the value of a viable utility or railroad usually exceeds the sum of the value of the individual parts. Occasionally, however, a particular combination of tangible assets will result in an unprofitable operation and the separate value of the assets may equal or exceed their value as a unit. In these instances the appraiser must decide whether to appraise the assets as an operating unit or on the basis of their separate valuation for other uses, e.g., a salvage or liquidation value. A salvage value appraisal is an exception to the unit concept. It is, however, in accord with the valuation principle of highest and best use if liquidation of the assets is permissible and probable. (See Assessors' Handbook Section 501, *General Appraisal Manual* for an explanation of highest and best use.)

UNITARY PROPERTY

The proper unit to be appraised is that which is ordinarily traded in the marketplace. Although this unit is readily distinguishable for property types that are actively traded, i.e., residential and commercial, it is not as easily discernible for the types of property that are rarely sold, i.e., large industrials, public utilities, and railroads.

In the case of utility and railroad property, the appraisal unit usually consists of all tangible items making up the operating system regardless of their location. A railroad, for example, probably could not continue in operation unless a purchaser acquired use of the rights-of-way, ties, rails, bridges, buildings, rolling stock, materials and supplies, and all the other assets making up the system.

Theoretically, all tangible items that are part of the operating unit could be included in the unitary value regardless of ownership. Practically, assessing agencies may lack authority to adhere totally to a use concept for defining the unit. In any event, a clear identification of what assets are to be included in the unit is essential in order to avoid assessing twice or not assessing assets that are used but not owned by an assessee.

As a general rule, the Board defines the unit to include all tangible assets **owned** by a state assessee and **used** in the operation of a utility or railroad; all other tangible assets owned or used by an assessee are excluded from the unit. This composition of the unit is based on the logical premise that the most likely sale of a utility or railroad would include all functionally related assets under the existing ownership.

The Board makes some exceptions for ownership in defining the unit. Taxable possessory interests created by special franchises conveying the right to use public streets and mainline railroad rights-of-way on government owned land are included in the unit since it is highly unlikely that such rights will be divorced from utility or railroad use. Assets of subsidiary corporations are sometimes combined with assets of the parent corporation to establish the unit. This combining of different company assets is made, for example, when a subsidiary operates as a part of the entire system and when there may be a joint use of assets or personnel. Leased property is included in the unit if it is so specialized it would have no separate value and if the lease arrangement is essentially a financing technique.

The Board's definition of the unit usually includes items that are nontaxable. Examples of nontaxable assets are licensed motor vehicles, assets located in federal enclaves, and assets located in other states. Under the unit concept, the procedure is to estimate unitary value, then make the allocation between states (if any) and then deduct from the allocated unit value the value of nontaxable items located within California.

NONUNITARY PROPERTY

Two general categories of property items are considered to be nonunitary: assets used in the primary operation of a railroad or utility but not owned by the assessee (leased property and possessory interests); and assets owned by the assessee but not used or needed in the primary operation (nonoperating property).

Utility companies often lease facilities such as office buildings, warehouses, and garages. When used in the operation of a utility, these leased properties could be included in the operating unit. The Board, however, usually excludes leased property from the unit and treats it separately in the valuation process because such property is not owned by the assessee and can be and often is sold as a unit separately from the utility operation.

A taxable possessory interest is created when a private entity acquires a taxable interest in nontaxable, government-owned real property. State assessees often enter into land leases with government agencies. These possessory interests, with the exceptions previously noted, are classified as nonunitary property.

Nonoperating property consists of property that is owned by a state assessee but is not necessary to the utility or railroad operation. Tangible assets not used in the assessee's operation do not generate income to the unit and therefore make no contribution to the unitary value. Their value must be measured separately from the unit.

Classifying assessee-owned assets between operating and nonoperating should be made by examining the use to which the property is put. In making this decision, the appraiser considers location, access, actual use, and the most probable use of the assets. Assessee-owned property typically classified as nonoperating includes assets leased to others, assets that are permanently out of service, and excess land holdings.

VALUATION DATE

The values of railroad and utility properties are volatile. Economic and physical factors that cause value changes are constantly at work. Some utilities are expanding while others are experiencing little or no growth. Consequently, an opinion of value must reflect the status of and assessee's property at some point in time.

The valuation date for state-assessed property is set out in section 722 of the Revenue and Taxation Code:

> State-assessed property shall be assessed at its fair market value or full value as of 12:01 a.m. on the first day of March.

Each year as of March 1 the Board determines the fair market value of the unitary property of every state assessee.

CHAPTER 2: UNITARY VALUE INDICATORS

INTRODUCTION

The basic appraisal principles and valuation methods contained in Assessors' Handbook Section 501, *General Appraisal Manual*, apply to the valuation of utility and railroad properties. The explanations in that manual of highest and best use, cash equivalent, income capitalization, capitalization rates and various other principles are followed in this handbook. However, those basic explanations are not sufficiently complete to describe appraisal procedures for utilities and railroads.

Valuation of utilities and railroads is complicated by the fact that these companies are, in addition to being affected by some of the market forces of supply and demand, regulated by government commissions. As a result, basic appraisal principles and procedures require adaptation to fit the condition of government regulation.

This chapter sets forth the general principles and procedures followed by the Board in the appraisal of the unitary properties of state assessees. An example of each of the value approaches will be found in Chapter 4.

COST APPROACH

COST, RETURNS, AND VALUE

The cost approach is considered a meaningful tool for estimating market value under certain conditions. Three cost concepts have potential application to railroad and utility properties -- replacement, reproduction, and historical. The relevance of these concepts will vary depending upon economic and regulatory influences on the market.

Replacement cost is the cost to replace an existing facility with one of equal utility. In the case of properties with growth potential and not subject to government regulation, the competitive forces of the market establish a return on replacement cost new which is sufficiently high to induce additional investment. In a nongrowth industry, the market establishes a return satisfactory to investors on a replacement cost less depreciation (RCLD) basis. Consequently, in a nonregulated industry, replacement cost either with or without depreciation is an important and valid indicator of value. If government regulation is deficient or ineffective, RCLD may also be valid for the appraisal of a utility. The reason for these conclusions is that the market may permit earnings which are sufficiently high to return the replacement cost of the investment together with a rate of return satisfactory to investors.

Reproduction cost may be different from replacement cost. It is the cost of an exact duplication insofar as is possible of an existing facility. This cost concept also has relevance as a value indicator whenever the market forces permit returns satisfactory to investors.

In the case of regulated utilities, the regulatory agency periodically establishes a rate base and a fair rate of return; utilities are permitted to earn at the established rate on the rate base. The practice of the California Public Utilities Commission and most other regulatory agencies is to use historical or original cost less depreciation as the rate base. If regulation effectively limits earnings to the rate base at a rate of return acceptable to investors, then the rate base or historical cost less depreciation (HCLD) tends to be a good indicator of market value. HCLD is of little use in the valuation of railroads, which have no rate base, and for nonregulated companies, such as some pipeline companies and private car companies.

HISTORICAL COST AND RATE BASE

The historical or original cost less depreciation indicator is not identical with the rate base as established by regulatory commissions. Some items included in rate base are not included in the historical costs; for example, working cash, licensed motor vehicles, and property located in federal enclaves. These properties are not subject to ad valorem taxation and consequently are excluded in the calculation of value indicators for ad valorem tax purposes. The regulatory commission in California does not include construction work in progress (CWIP) in the rate base, but this figure is included in the historical cost approach because CWIP has value and is taxable.

The regulatory commission establishes the rate base as of a test period, but immediately thereafter new investments, depreciation, and property retirements may occur. Consequently, the rate base may not include all investments and depreciation and may include retired property. There are other reasons for differences between the rate base and historical cost, but the most significant ones are mentioned here. In any one case, the difference between HCLD and rate base may be large.

The depreciation method allowed by the regulatory commission is a straight-line, remaining life method. This is an accounting technique for allocating past investment to current expense. The method is usually inappropriate for depreciating property for appraisal purposes because the decline in value is assumed to be equal for each period, thus ignoring the time value of money. However, since earnings are limited to the rate base, and depreciation influences the rate base, the straight-line depreciation method is acceptable for calculating the HCLD indicator.

UPPER LIMIT OF VALUE

Sometimes it is argued that reproduction cost new less depreciation sets an upper limit on value. This argument is a misstatement of a generally accepted appraisal premise that replacement cost new of a property, assuming no costly delay, “tends” to set an upper limit on value. The principle of substitution is the basis for this premise. It holds that a prudent purchaser will not pay more for a property than the cost of a substitute property if similar substitutes with equivalent utility do exist or can economically be created. The principle has no application if substitutes are not available and cannot feasibly be created.

In a freely competitive market, the value limit premise in the long run has validity for residential and commercial properties that have similar substitutes. The premise has less application for large industrial complexes and regulated utilities and railroads where replacement costs, sales, listings, and offers of similar substitutes are either nonexistent or very difficult to analyze.

In *ITT World Communications, Inc.* v. *Santa Clara County* (1980), 101 Cal. 3d 246, the court held that ignoring RCLD as an upper limit of value was not in violation of law and that use of capitalized earnings was proper even though the value arrived at might exceed RCLD. The court pointed out that an assessing body may exercise discretion in using one or more of the traditional value approaches. These findings are in keeping with the unit concept which presumes that the value of an operating unit may well exceed the value of its component parts.

COMPARATIVE SALES APPROACH

SALES

The comparative sales approach is seldom applicable to utility and railroad properties since they infrequently sell. Moreover, the few sales that do occur are difficult to analyze because such transactions usually include subsidiary companies, have complicated financial arrangements, and often include only a portion of the unitary property. The approach should not be ignored when sales exist, but careful analysis is required before a sale can be used as an indicator of value.

The market value concept assumes a typical prospective buyer exists for the property being appraised. Since utility and railroad properties are unique and rarely sold, the type of buyer is reasoned to be someone who would use the property in a similar manner as the present owner unless the property clearly has a more probable use. The prospective buyer would have similar capability, knowledge, and credit rating as the present owner and would take ownership of the property under the assumption that ad valorem and income taxes would continue.

In California, utilities and railroads have sold portions of unitary properties, such as distribution systems and rights-of-way, to tax exempt agencies. Since tax exempt agencies usually do not pay ad valorem or income taxes, do not have rates which are regulated, and can borrow money by issuing tax exempt securities, they have many advantages which do not exist for a typical buyer. These advantages, together with the right of condemnation, have resulted in the sales prices of such properties taking place at amounts equivalent to reproduction cost less depreciation. Such sales do not meet the definition of a market value transaction and should not be used as an indicator of market value. Moreover, the sale of a fractional part of a unit has doubtful validity as an indicator of the value of an entire unit.

Usually corporate acquisitions are accomplished by mergers. In these cases, control of the corporation's assets is acquired. While such acquisitions are not outright sales of the tangible assets subject to ad valorem taxation, they are the equivalent of sales of the assets since complete control of the assets is acquired. Application of the comparative sales approach includes analysis of these transactions.

STOCK AND DEBT APPROACH

The stock and debt approach is based upon the accounting equation that the value of the assets equals the value of the liabilities plus net worth. Market values of the long-term debt, current and deferred liabilities, and capital stock are estimated, and the sum of these amounts is held to equal the value of the total corporate assets. The value of the total corporate assets includes nonunitary and nontaxable assets; therefore, value allocations and deductions must be made to arrive at a value estimate for the unitary property. These value adjustments should be made on the basis of the value the securities market places on the deductible assets. In some cases, a further allocation is required to separate California property from property located in other states.

The stock and debt approach has many limitations. It cannot be applied to all companies because sometimes there is little or no trading of the securities. Furthermore, a utility or railroad may be a part of a larger holding, and the parent company may be involved in other financial endeavors. The necessity to use a series of allocations, including allocations between companies and between states, greatly weakens the validity and reliability of the approach.

Another major limitation of the stock and debt approach results from the nature of the rights involved in a stock transfer. The usual purchaser of stock acquires ownership rights in the corporation, but this is an ownership without control. The stockholder has the right to vote, but he has no effective control or liability such as occurs when someone buys property in his own name. The purchase of enough stock to actually gain control of the corporation is usually made at a price higher than the price at which the stock is typically traded. A study of tender offers will illustrate this contention. This may indicate that typical stock prices do not effectively measure the advantages of ownership and control which are inseparable in noncorporate property.

Despite these limitations, the stock and debt approach has some validity. Well informed investors do acquire stock based on analysis of a company's present and future earning capacity. The approach is meaningful when market participants have sufficient information to accurately measure the present value of future benefits likely to accrue to the corporation.

INCOME APPROACH

The income approach to value is considered an excellent method to estimate market value if reliable economic data are available. Application of the approach requires estimating future annual income and converting that income into a value estimate by means of a capitalization rate. The critical ingredients of the approach are future income, duration of the income, capitalization rate, and method of capitalization.

FUTURE INCOME

The income to be capitalized is future net income that can reasonably be anticipated by a prospective purchaser. This "principle of anticipation" was explained by the Court in *De Luz Homes, Inc*. v. *County of San Diego*, (1955) 45 Cal. 2d 546, as follows:

> The net earnings to be capitalized, ...are not those of the present owner, but those that would be anticipated by a prospective purchaser. 'Anticipated future earnings is the **sole** matter of consequence, since reported earnings are already water under the mill.' (Bonbright, op. cit. supr, p. 229; see also Babcock, op. cit. supra, p. 229-230)....

Income forecasting is usually done at the net income level. A current annual gross income estimate for the property is reduced by normal operating expenses to arrive at net income. The appraiser then estimates what shape that net income will take in the future. It is this future net income stream that is capitalized into value.

Income projections for utility and railroad property normally start with an analysis of current financial statements since investor decisions are based on this same data source. For growth-oriented properties analysis of the current year's operating statement is usually preferable; past earnings may give little insight into the future when annual investments in new plant are in millions of dollars. For nongrowth companies, it may be reasonable to analyze past earnings over a longer period of time.

In the case of railroads some appraisal authorities advocate analyzing at least a five-year history of earnings in order to level out the peaks and valleys. Income projections, however, should be based on the purchasing power of the dollar as of the appraisal date. Averaging five-year old dollars with current dollars may result in major income distortions because of inflation. Inflation can be treated consistently by adjusting historical earnings to current dollars prior to using that data to forecast future income; consistent application requires capitalizing income at a rate based on the current cost of capital.

Analysis of operating statements may require reconstructing income and expenses for various reasons. For example, recent rate changes which are not fully reflected in current operating statements may have to be adjusted to a full year basis. Similarly, expenses which are unusual and nonrecurring may have to be deleted. The objective of this analysis is to arrive at a net income figure that from a buyer's viewpoint is probable and likely for the subject property.

For property tax purposes, the level of income that is capitalized is typically a "net" income prior to any deductions for interest, corporate income taxes, ad valorem taxes or depreciation. Interest expense is an indication that a portion of the capital is borrowed, and this fact should not lower the value of the unitary property. Debt interest expense is accounted for in the capitalization rate, so interest cannot properly be deducted from income as an expense. Corporate income and ad valorem taxes are legitimate operating expenses and must be considered as such. Tax allowances should approximate the amount of taxes that would be anticipated by a prospective purchaser. Since both income and ad valorem taxes are a function of either income or value, and since both income and value are being estimated, it is preferable to provide components in the capitalization rate for these taxes instead of deducting them from income. State income and ad valorem tax components cannot be accurately estimated for interstate companies because out-of-state tax rates

necessary for the computation are usually unknown to the appraiser; so in those cases such taxes should be directly deducted from income.

Depreciation, as reflected in operating statements, is not a cash outlay, but rather a bookkeeping allocation of a portion of a prior accounting period's investment to current expense. Therefore, for purposes of income capitalization or discounting a cash flow, book depreciation is not an expense. In the De Luz decision, the court, dealing with the question of expensing depreciation, pointed out that to estimate depreciation, the appraiser must preconceive a capital value and that to include an expense based on the very answer you seek is in error. The investor, however, is entitled to recapture his investment as well as earn a return on it. The court further held that capital recovery is correctly handled by including a recapture component in the capitalization rate.

The Interstate Commerce Commission (ICC) accounting procedures allow railroads to expense track replacement costs in the year of installation. This procedure is the equivalent of allowing 100 percent depreciation of long-lived replacements. Consequently, track maintenance accounts must be carefully analyzed, and those expenditures that would normally be capitalized under generally accepted accounting practices should not be allowed as expenses.

The behavior or shape of the future income stream must be estimated and projected over the remaining life or expectancy of the unitary property. An exact prediction of the behavior of income is not possible or necessary. It is sufficient to estimate future income behavior that a prospective purchaser would anticipate. The purchaser's estimate would be based upon the probable or likely "net income" or cash flow over time. Actual incomes fluctuate, but an estimate by a buyer would likely be a smoothed or averaged income projection.

Those companies which are allowed to earn on an HCLD rate-base concept should, theoretically, have declining rate bases because most of their assets are depreciable. Income would decline if the allowed rates of return were unchanged when new rate bases are established and if regulation was instantaneous. Usually, however, rates of return are increased by regulatory Commissions and such changes tend to compensate for any declines in rate bases. Furthermore, new rate bases are only periodically established, and regulation is not instantaneous. Consequently, rate bases for some companies may not change for long periods of time, and income may not decline.

Growth in the consumption of the services or product on a per customer basis has been characteristic of the utility industry. The growth rate varies with the different utilities and will continue to vary depending on regulatory attitudes about conservation. The growth in consumption per consumer causes income to rise.

Another factor that needs to be considered when projecting income is that as the assets are used and become older, there is a tendency for their efficiency to decline. This decline in efficiency causes costs to rise and may cause income to decline unless regulatory commissions provide rate increases to offset these rising costs.

All of the above factors complicate the estimation of the behavior of the income stream. Some plausible arguments can be advanced for using either an inclining income premise or a declining

income premise. A constant or level income premise may be the best fit if the factors influencing income changes are offsetting. In any event, the appraiser's estimate should fit the expectations of investors who constitute the market for the property being appraised.

The income premise selected is only an estimation or projection of the probable behavior of the income over time. It is not used as a means of providing for risk or the likelihood that the income will or will not be received. Those factors are properly reflected in the capitalization rate.

DURATION OF INCOME

Application of the income approach requires estimating the duration of a property's earning potential. Land has the capability to earn income forever while improvements and personal property have limited economic lives. Utilities and railroads are made up of a large percentage of assets that have terminal lives. These assets are continually replaced so that in reality the companies have infinite economic lives.

Under California law, the unitary value of a utility or railroad must reflect only the value of the property that exists on the lien date. Future income growth and endurance resulting from future investment should not be considered in the income amount and duration estimates unless the costs of these future investments are expensed from the projected income stream. To do other wise results in valuing property which does not exist on the lien date.

Capitalization of income for a limited duration requires an estimate of remaining life. Under the unit concept, the net income stream should not be fragmented but rather should be capitalized in total for a single life period. A composite life expectancy can best be estimated by analyzing the life expectancies of the various assets that make up a company's unitary property. There should be a weighting of relative importance of each asset's contribution to remaining life; this weighting can be done on the basis of historical, reproduction, or replacement costs. Replacement cost is considered the best premise because it gives consideration to current price levels. An example of a remaining life estimate weighted by replacement cost is shown in Appendix 2.

Capitalizing income on a perpetual basis requires making in-depth studies of replacement costs and replacement patterns. The replacement costs of assets having the same quality and capacity as the existing assets must be deducted from the income stream. It is this provision for future replacements, above and beyond the normal maintenance and repairs associated with the unit, that perpetuates the income life. A major problem with the approach is that most replacements are not exact replacements; they are also improvements which increase plant quality and capacity. For example, a four-inch pipe may be replaced with a six-inch pipe, or step-by-step switching may be replaced with electronic switching. The trend in both utilities and railroads is to upgrade as well as maintain their operations. If the cost of investment in new plant or replacements that increase capacity is to be expensed against income, then the projected income stream must also include the income potential of the future investment. The difficulty in making these estimates is a factor that has led the Board to use the limited-life model.

CAPITALIZATION RATE

A capitalization rate is an expected rate of return that investors would require to invest in a property. It is an expected rate of return that an investor could get from another equivalent risk property. The capitalization rate, often referred to as the current cost of capital, is dependent on risk -- the higher the risk the higher the rate. If a given property type is typically financed by both debt and equity capital, then the capitalization rate will include both financial and business risk.

Property Tax Rule 8 of the California Administrative Code provides for use of either the sales extraction or band-of-investment method for estimating the capitalization rate. Since sales of utilities and railroads are infrequent, the appraiser by necessity must rely on the band-of-investment method.

Proper application of the band-of-investment method requires obtaining and analyzing data by industry type for:

- the percentage of debt and equity that make up the capital structure;
- the current cost of equity capital;
- the current cost of debt capital.

These data should be further categorized by industry subgroups depending on bond ratings, size of investment, income tendency, and growth potential. The purpose of this grouping is to ascertain a rate of return for the different types of property with equivalent risks.

The purpose of analyzing actual capital structures of an industry group is to arrive at a representative structure that might be created by a prospective purchaser acquiring a property in this group. In practice, actual capital structures are usually determined on the basis of book values, because data are readily available and regulatory commissions use these data for establishing rates of return. Conceptually, capital structures based on current security values are more valid for estimating a representative structure for a prospective purchaser. Market derived structures are more likely in keeping with future expectations of a purchaser; historical book structures may be outdated in light of today's market.

The current cost of capital should be based on data taken from the capital markets, i.e., the stock and bond markets for utilities and railroads. The debt and equity rate estimates should reflect the cost of these kinds of financing as of the appraisal date. Current debt rate information is regularly published by reputable firms and hence, readily available for analysis. Rates on preferred stock can be obtained from the same sources. The rate of return on common stock, however, is a more difficult and subjective estimate, and there is no one generally accepted method to estimate this rate of return. A number of estimates should be made using such methods as earning-price ratios, discounted cash flow to common stockholders, typical relation between bond and equity rates, and return on common equity. A range of equity rates should be developed, then a representative rate can be selected. For companies where these data are not available, equity rates can be estimated by comparison to other companies with similar risk whose rates have been established.

Some authorities contend that the capitalization rate for a company should be based on that company's actual capital structure and embedded debt cost. The logic is that a prospective purchaser would not refinance the company, but would assume the existing capital structure and debt obligations. This contention lacks merit because the statutory market value definition requires expressing value in terms of cash or its equivalent. In the case of an assumption, debt with low nominal rates of interest would be valued at a discount at an effective debt rate equivalent to a current rate. Furthermore, a knowledgeable buyer, a requirement of market value definitions, would be expected to use some financing in order to leverage his investment; it is highly unlikely that a company with a 100 percent equity structure would be acquired with equity capital only.

The sum of the current cost of debt and equity weighted by the percentage of debt and equity in a representative capital structure equals the expected capitalization rate. This rate reflects the cost of capital at a given point in time; it is the basic rate of return provided on total value. It should only be applied against constant dollar income streams or cash flows that represent that same point in time if inflation is to be treated consistently. Capitalization of an inflationary income stream would require further modification of the rate.

METHOD OF CAPITALIZING INCOME

The purpose of a capitalization method is to convert future income into value. Capitalization methods are described by the shape and duration of future income. For example, future income may last forever or it may terminate; it may incline, remain level, or decline, or have some combination of these characteristics. Capitalization methods based on terminating income projections are generally applied in conjunction with traditional land and building residual techniques or property reversion techniques, while direct capitalization methods are used with perpetual income flows.

A capitalization method must provide for a return "on" and a return "of" a prospective purchaser's contemplated capital investment. A major difference in the various capitalization methods is the assumption as to how the return of capital (capital recapture) will take place, e.g., periodic recapture or lump-sum repayment. An example of the recapture method used by the Board is shown in Appendix 3.

An excellent discussion of generally accepted capitalization methods is contained in Assessors' Handbook Section 501 and will not be repeated here. Suffice it to say that different methods are based on different assumptions and will result in different value estimates. The method selected should be based on factual data and, to the extent known, should reflect expectations of investors who constitute the market.

The property reversion technique is a valid method for the appraisal of utilities and railroads. This particular capitalization method does not separate the income between land, improvements, and personal property, which is a consistent application of the unit concept. The method is based on the assumption that income being generated by the unitary property today has a limited life; the

present worth of that income stream will reflect the value of the assets that exist today. Income growth resulting from future investment is not a consideration.

The property reversion technique does require estimating the future value of any benefits that remain at the end of the limited life. Those remaining benefits, usually consisting of land, should be discounted to present worth and added to the present worth of the income stream. The land contribution to the income stream is included in the capitalized value only for the duration of the income, therefore the present worth of the land reversion must be added to the capitalized earnings. The current price of land is typically used for the future value estimate. Such procedure is in keeping with a perpetual income attributable to land and a reflection of benefits stated in today's worth of the dollar. In the case of a utility or railroad with a terminal income stream of long duration, say twenty years or more, the value estimate of the land reversion has an insignificant influence on the total value indicator because of the large discount applied to the reversionary value.

OTHER ADJUSTMENTS TO THE CAPITALIZED INCOME

The value indicator arrived at by the property reversion technique, or any other technique, may require additional adjustments. Deductions may be necessary to remove nontaxable assets from the earnings, and additions may be needed to include the value of taxable tangible assets whose income is not reflected in the earnings.

Construction work in progress (CWIP) is an example of taxable tangible property which may not be producing income. For proper analysis, the CWIP should be divided into two parts -- replacement of existing plant and construction of new plant. CWIP which replaces existing plant may be necessary for maintaining the income and expectancy of the present plant; if its value is reflected in the capitalized earnings, no adjustment is necessary. CWIP for new plant should, when it comes on line, produce additional income which is not reflected in the capitalized earnings. The capitalized earnings should be increased to reflect the value of the CWIP for new plant.

An income stream could be imputed to this CWIP, and it could be capitalized. Such a procedure, however, requires several subjective estimates for which there is little or no supporting data. It would be necessary, for example, to estimate the date the CWIP would begin producing income, the amount of that income, the amount of the operating expenses, the amount and the timing of the future capital expenditures necessary to complete the project, and the duration of the income. Additionally, the first year or so of operation would likely be at a reduced level of capacity, and this also would have to be estimated. If possible, such estimates should be avoided since errors are compounded in the capitalization process.

The appraiser's objective is to estimate the value of the CWIP that is not producing income. The capitalized costs as recorded in the accounting records, including allowances for funds used during construction, are a good measure of the CWIP value. The current cost for a proper new plant, in accordance with appraisal theory, approximates value. Its costs can also be likened to a

sale price, since the company is in effect purchasing the plant through the variously negotiated agreements for material, supplies, labor, and the services of a contractor.

Future use property, i.e., property purchased and held for a future use, is another example of property whose value contribution is not likely to be reflected in the capitalized income indicator. If this is the case, and if the future use property is considered unitary, then its value should be added to the capitalized earnings. Licensed motor vehicles and property located in federal enclaves are examples of nontaxable properties whose value contribution must be removed from the capitalized earnings indicator.

Making adjustments to the capitalized earnings value indicator requires a modification of the unitary concept. All value indicators, however, are subject to various kinds of adjustments. No approach should be construed so narrowly that its application would prohibit deletions for nontaxable property and additions for taxable property whose value is not reflected in the value indicator. Such adjustments are reasonable and necessary.

VALUE CONCLUSION

In most cases, the appraiser will have more than one indicator of value at his disposal. And, it is possible to have more than the three standard indicators (cost, income, and comparative sales) because more than one indicator can be calculated for each approach. The appraiser needs to study the indicators, determine their relative validity, and arrive at a conclusion as to the market value of the property.

Significant differences often occur between the several value indicators. The appraiser should have sufficient factual material to make objective judgments about these differences. He should fully understand the source of the data used in each indicator and the likelihood of its being accurate. He should be aware of any reporting limitations associated with property statements and the number and reliability of modifications made to data contained in financial statements and published reports. Such understanding is necessary to correctly reconcile differences in the indicators.

Some authorities advocate assigning standard weights to the value indicators in order to arrive at a value conclusion. Such practice, however, may lead to arbitrary conclusions, and preclude or limit appraisal judgments that should be exercised in the valuation process. For example, the income approach for an electric cooperative that has a policy of charging low rates should not be accorded the same fixed weight as the income indicator for another utility that charges economic rates. Similarly, a stock and debt indicator resulting from a series of arbitrary allocations should not be assigned the same fixed weight as one where allocations are unnecessary. Of course, if the proper income could really be determined for the cooperative, and if perfect allocations for the stock and debt approach could be made, then the case would be stronger for according equal weights. But this begs the question since none of the value indicators are sufficiently error-proof to warrant fixed weightings.

The importance of each appraisal approach varies with the industry, the property, and the nature and quality of the data. In valuing utility and railroad properties, the income approach is often given the greatest weight since the purpose of owning such properties is to derive income. Yet the complexity of the data and the difficulty in making the estimates means that in the best of circumstances the income approach is still an approximation to market value. In the valuation of railroads, the cost approach is given little weight because many costs are not recorded in the accounting records and obsolescence for railroads is a subjective measure. For utilities, however, HCLD is usually given significant weight because earnings are tied to an HCLD rate base. RCLD is usually accorded little weight since neither utilities nor railroads have historically produced earnings that would justify that amount. The stock and debt approach should be considered, but its reliability depends on whether security values are a reasonable measure of tangible assets and whether value allocations between unitary property and nonunitary property are necessary.

The final value conclusion is an opinion. That conclusion should be an informed judgment resulting from a thorough understanding of the reliability of the value indicators, together with a knowledge of the trends and factors that influence the market value of the subject property.

CHAPTER 3: ALLOCATION OF UNITARY VALUE

INTRODUCTION

Once the unitary value of a utility or railroad is determined, it must be allocated first between states, if the system extends into two or more states, and then among the various taxing jurisdictions within the state where assets are located. Under the unit concept, the use of allocation formulas cannot be logically argued as assigning market values to each item of property in the unit. Nevertheless, California property tax laws mandate an allocation process. California has no authority to levy a property tax against property located in other states, and section 14 of article XIII of the State Constitution requires that California property be assessed at situs. Interstate and intrastate allocation requirements are fundamentally the same. In California, however, wider varieties of data are available for interstate allocation than for intrastate allocation.

INTERSTATE ALLOCATION

Some railroads and public utilities have unitary tangible assets located outside of California. These assets are not subject to California property tax, and their values must be excluded from the unitary value.

Since it is possible to develop a cost estimate for California property apart from the total system cost, no interstate allocation is required for the cost approach. However, with the stock and debt and the income approaches, system unitary values are developed and a portion of the system unitary values must be allocated to California.

Unitary values could be allocated using one of several different factors. For example, allocation could be done on the ratio of California property cost, revenues, or "use" to system property cost, revenues, or "use". If some combination of these factors is used, a weight should be assigned to each factor.

When using cost as an allocation factor, the basis might be historical, reproduction, or replacement cost, either with or without depreciation. When using revenues as an allocation factor, the basis might be gross or net operating revenues. "Use" as an allocation factor could be based upon quantities of kilowatt hours produced or consumed, ton miles of freight moved, tons of freight originated or terminated, etc. The use of any one of these factors, or a combination thereof, will result in a different taxable value being allocated to California.

The National Association of Tax Administrators (NATA) and the Western States Association of Tax Administrators (WSATA) have studied and made recommendations for interstate allocation. In 1949, the NATA Committee on Railroad Allocation adopted its allocation formula for railroads guided by the following principles:

1. That a workable formula suitable for application in all states is desirable, to the end that the aggregate of the allocation percentages of a system (the parts in the various states) should equal 100%.

2. That a precise and theoretically correct formula of allocation is probably not ascertainable.

3. That a formula should be simple of application and should not require unreasonable burdensome calculations.

4. That it should be based on data that is readily available from the taxpayer's existing records and statistics.

5. That the factor and weighting chosen should lead to a plausible conclusion that the allocation formula divides the system value in proportion to the contribution of the several states to such value.

The WSATA 1960 Report of Committee on Allocation of Public Utilities, page 3, adds another principle of allocation:

> Allocation factors 'in themselves' should not be allocations. Any factor which has been derived from another factor is objectionable in that it accumulates error and may become entirely unrealistic.

The Board seeks to achieve a fair and uniform system of interstate allocation and follows in principle the NATA and WSATA recommended formulas. An explanation of the procedures used by the Board is shown in Appendix 5. An in-depth discussion of the formulas, except for railroads, is contained in the WSATA 1960 Report.

INTRASTATE ALLOCATION

BASIS FOR ALLOCATION

While value allocation is by nature somewhat arbitrary, the method used should result in a reasonable estimate of each part's proportionate contribution to the earnings of the whole, because earnings are the very substance of value. Earnings, however, arise in the aggregate and are not known or recorded on an item by item basis. Practically, unitary value is best allocated among taxing jurisdictions within the state in proportion to replacement cost new less depreciation (RCLD) of each item of unitary property. This method is preferred because RCLD estimates can be established for each item of property and because of the implicit assumption that each item of property makes a contribution to total earnings. The logic for this method can be demonstrated by an example.

Suppose that two identical hydroelectric power plants were constructed by a power company, one just before World War II and one immediately after, when prices were almost twice as high. Each plant is generating the same amount of power and will continue to do so for only a slightly different number of years in the future. Each plant will produce practically the same total amount

of a salable product between the present time and its retirement date. Thus, each plant's production, and hence its contribution to the company's total earnings, is practically the same. If the unitary value allocation is made in proportion to RCLD, the allocated value will be practically the same, for both plants, which is in accord with earnings. However, if the unitary value is allocated say in proportion to HCLD, the prewar power plant will have only about one-half the allocated value that the postwar plant will have.

The use of replacement cost new less depreciation for allocation purposes is complicated by the fact there are many different methods for making cost estimates. The Board applies trending factors to original costs to develop current cost estimates and uses percent good tables to estimate depreciation. This procedure results in figures that may be nearer to reproduction cost new less depreciation. The reproduction cost concept, however, has the same advantages as replacement cost for allocation purposes.

Authorities who support allocation in proportion to HCLD do so mainly on the basis that HCLD approximates the rate based upon which a utility is allowed to earn in California. HCLD, or rate base, is an amount that the regulatory commission considers only in the aggregate in rate determinations. Rates determined are supposed to insure an adequate return on the depreciated investment in plant that still remains in service.

The comparative sales approach can be used for allocation when comparable sales of similar property components actually exist, such as occurs with land. Selling prices of surrounding land parcels provide a convenient and uniform method of measuring the contribution a given land parcel makes to the unitary value of a company, for substitution of equivalent utility of a given parcel requires, as a first step, the acquisition of land. The use of comparative sales has little application to other classes of property since an active market usually does not exist for the multitude of structures, fixtures, and machinery and equipment that make up an operating utility or railroad system.

Other bases for allocation have been suggested, most of which involve physical units instead of dollar figures. For example, for electric companies the unitary value might be allocated in proposition to conductor-miles, or for a railroad, in proportion to track-miles. While some states do allocate value in this manner, there is little to support these methods except ease of application.

BOARD PROCEDURES BY PROPERTY CATEGORY

Property Identifiable by Location

This category of property consists of those individual items of property other than land that are readily identifiable by location. Examples include such items as buildings, substations, equipment, furniture, boats, etc. Assessees report the cost and tax-rate area location of each item of property in this category. With few exceptions, the value allocated to these items is determined on the basis of RCLD.

Continuous Structures

Continuous structures consist of those items of property other than land that may cover a wide geographic area. Examples include railroad track, gas transmission and distribution mains, electric transmission and distribution lines, telephone wires and cables, canals, pipelines, etc. Assessees report the number of units of each item located within a tax-rate area as well as the total number of units, and the total cost of each item. Allocations are also made to these items on the basis of RCLD, further refined to allocated value per unit.

Land

Unitary land consists of those land parcels owned and used by state assessees. The portion of unitary value allocated to land is the summation of the separate values of each individual parcel of unitary land. Periodically, Board appraisers physically inspect and individually appraise land parcels. Sales of surrounding properties are compiled and analyzed and directly compared to the subject land parcels. To the extent possible, like properties are compared with like properties, taking into consideration use limitations as well as physical characteristics. When comparable data for certain land parcels, such as transportation corridors, are lacking, sales of surrounding land parcels are used to develop a replacement cost or cost to substitute land approach. See *Los Angeles Dodgers, Inc.* v. *Los Angeles County* (1967), 256 Cal. App. 2d 918, in this regard.

ALLOCATION CALCULATIONS

The Board determines the unitary value for each assessee by considering the indictors of value. The unitary values are then placed on the Board's rolls for each county allocated by taxing jurisdictions.

The allocation ratio for an assessee is calculated by deducting the values of land and materials and supplies (M&S) from the total unitary value; the remaining value is divided by the total RCLD of the remaining properties to determine the ratio. Suppose, for example, the remaining unitary value is $8,000,000 and the comparable total RCLD is $10,000,000. The ratio of value to RCLD then, is 80 percent. The allocated value of each item listed in the assessee's property statement, except land and M&S, is made by multiplying the RCLD of each item by 80 percent. The sum of the allocated values, including land and M&S at 100 percent, will equal the total unitary value determined by the Board.

The allocation computation for continuous structures requires an additional step. The allocated value determined above represents the total value for a property type (poles, wire, etc.). This value must then be divided by the total number of units for each item to arrive at a unit allocated value (UAV). The UAV is then applied to the number of units within a taxing jurisdiction or tax-rate area to determine the allocated value for said area.

See Chapter 4, Intrastate Allocation of Value, page 35 for an example of this process.

TAX AREA MAPPING SYSTEM

The Board uses a tax-rate area system for achieving the requirement of assessing property at situs. The system consists of assigning a unique number to every geographic area in the state in which there is a unique combination of tax levies. State assessees report their property segregated to these numbered tax-rate areas, and the property is so assessed on the Board Roll. The portion of the roll pertaining to each county is delivered to the county auditor in August. The county then collects the taxes from the state assessees and distributes the taxes to the cities and districts. A description of the tax area mapping system is shown in Appendix 6.

CHAPTER 4: DEMONSTRATION APPRAISAL AND VALUE ALLOCATIONS OF A TELEPHONE UTILITY

This demonstration appraisal illustrates the appraisal methods discussed in Chapter 2, Unitary Value Indicators. The illustration consists of several staff work sheets and financial reports filed by the taxpayer. The results of the work sheets are posted to an Appraisal Data Report form. A value conclusion is reached, and the value is allocated to the various tax-rate areas where the unitary property is located.

This chapter contains six sections:

- Appraisal Data Report
- Cost Approach
- Income Approach
- Stock and Debt Approach
- Intrastate Allocation of Value
- Property Statement

APPRAISAL DATA REPORT

The appraisal data report is a document used to record and transmit value indicators and staff recommended values of unitary property of state assessees to the Board. The form contains a brief description of the utility; a tabulation of the value indicators for a two-year period; a five-year history of plant additions and retirements, net operating income, and construction work in progress; a final value recommendation; and a remarks section used for reconciling the value indicators. For large companies, written appraisal narratives supplement the appraisal data report. A completed appraisal data report for the intrastate telephone company that is the subject of this demonstration follows.

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APPRAISAL DATA REPORT

1980 ASSESSMENT

STATE BOARD OF EQUALIZATION
VALUATION DIVISION

COMPANY Juniper Telephone Company No. 299

DESCRIPTION This company provides services in the vicinity of Juniper and rapidly growing areas.

All value indicators are considered in determining the market value of the taxable unitary assets including construction work in progress and materials and supplies. The indicators do not include property classified by the staff as non-unitary property.

I. VALUE INDICATORS

	AS OF MARCH 1, 1979	AS OF MARCH 1, 1980
A. Historical cost less Book Depreciation	40,574,922	49,586,629
B. Reproduction (Trended Historical) Cost Less Staff Estimated Depreciation	59,564,836	76,492,454
C. Capitalized Earning ability based on annual net operating income prior to deductions for depreciation, income and ad valorem taxes		
1. Regular calculation 1/	43,441,819	47,658,344
2. Modified calculation 2/	44,574,144	49,017,229
D. Stock & Debt Value	40,523,878	47,595,960

1/ Income tax component based on straight line depreciation.

2/ Income tax component based on accelerated Depreciation. If applicable, adjustment made for investment tax credit.

II. HISTORY

CAL. YEAR	CALIFORNIA PLANT ADDITIONS	CALIFORNIA PLANT RETIREMENTS	REPORTED NET OPERATING REVENUES SYSTEM ☐ CALIF ☒	CALIFORNIA CONSTRUCTION WORK IN PROGRESS ON LIEN DATE	
1975	5,724,577	325,062	3,626,954	1976	405,476
1976	3,304,469	403,394	4,083,801	1977	1,104,149
1977	8,622,651	1,180,872	5,042,991	1978	3,283,698
1978	8,229,745	532,768	5,393,083	1979	2,335,553
1979	11,362,755	758,714	6,459,042	1980	3,357,654

III. VALUE ESTIMATES FOR

	1979	1980
Staff Recommendation	45,000,000	50,000,000
Board Adopted Value	45,000,000	

IV. REMARKS

The company operates in an area experiencing continued expansion. As a result the company has a consistent overall growth rate averaging 19%. Number of telephones increase 8,000 from previous year and net operating revenues increased 20%. The company reflects a consistent upward trend in its utility operation. Plant additions increased 37% from the previous year. About 4,000 telephones were assumed to be installed during the last six months and therefore did not reflect income for the full year. This matter is considered in reconciling the value indicators.

By RC (APPRAISER) Date 4/23/80

By DG (APPRAISER) Date 4/23/80

COST APPROACH

State assessees are required to report to the Board the original investment costs of all assets. This report is the basis of the cost estimates prepared by the staff. In the cost work-up, the cost of nontaxable property is excluded and the costs of leased property defined as unitary property is included.

The starting point in the cost approach is the bottom line of the cost worksheet (see first column, line 39 on page 28). This amount can be reconciled to balance sheet totals for the company. From this point on, a series of exclusions are made until the cost of the total taxable unitary assets is reached at line 23. The total taxable unitary assets are identified as those which are in service and those which are not in service.

The first set of exclusions, working from the bottom of the form to the top, is "Other Adjustments". Under this part of the form, the cost of miscellaneous items which are not part of the taxable unitary property is deducted. Such items include preliminary engineering and research costs not associated with tangible property, property stored out of California, deposits or advance payments, property retired or sold between end of year and March 1 lien date, etc. In the example shown, no such adjustments are required.

The second set of exclusions is labeled "Non-Taxable Property," and covers unitary assets not subject to ad valorem property tax. Licensed motor vehicles are good examples. This set of exclusions also includes assets located on federal enclaves which are nontaxable, and improvements to leased premises which are assessed by the county assessor. All of these assets are an integral part of the system, but for one reason or another are not subject to ad valorem tax or are assessed elsewhere. In the example, the costs of licensed motor vehicles and the cost of a licensed trailer are excluded.

The third set of exclusions is called "Misc. Phys. Property" (Miscellaneous Physical Property). These are assets which are classified as nonoperating. They consist of assets which are not used in the principal business of the assessee. These assets are appraised apart from the unit and consequently their costs must be excluded from the cost of the unitary assets to avoid a double assessment.

The remainder (shown at line 23), after the three sets of exclusions are deducted from the total cost of the assets, equals the cost of unitary assets subject to ad valorem tax. These costs in turn are subdivided into two main groups. The first group includes the cost of such items as property held for future use, materials and supplies, construction work in progress, etc. The second group is the cost of plant in service. The cost of any leased assets included in the unit are added to the plant in service. No leased assets are included in this example.

The original cost figures are trended to produce a trended historical cost or reproduction cost. The reproduction cost is depreciated by the use of percent good tables based on a present worth concept, while historical cost is depreciated on the basis of the straight line method required by the regulatory commission.

STATE BOARD OF EQUALIZATION - VALUATION DIVISION

COST WORK SHEET

Company: Pacific Gas & Electric Co.

No. 2969

Year 1980

	REF.	HISTORICAL COST	TREND Table	TREND Factor	REPRODUCTION COST	COND. Life	COND. %	R. C. L. D.	H. C. L. D.	
Taxable Plant Equip. in Service										
1 Land Assessed As Such		442,272			344,810			344,810	Total Plant In Service	1
2 Other Land Rights									Line 12	2
3 Organization, etc.		350			350			350		3
4 Rolling Equipment									58,209,356	4
5										5
6 A's & B's 197				J-13	Service Life					6
7 A's & B's 197					30 Yrs				Less Depreciation Reserve	7
8 A's & B's 197										8
9 A's & B's 197 8		8,229,745		113	9,299,612		97	9,020,624	12,519,439	9
10 A's & B's 197 9		11,362,755		100	11,362,755		99	11,249,127		10
11 Other		38,174,234	(2)	175.70	67,072,129		77.5	51,980,900		11
12 Total in Service		58,209,356			88,079,656			72,595,811	45,689,917	12
Taxable Plant & Equip. not in Service										
13 Nuclear Fuel										13
14 Acct. R & D										14
15 Gas in Storage										15
16 Gas in Mains										16
17 Held for Future Use Land		2,378		100						17
18 Held for Future use Non-Land										18
19 C.W.I.P Land										19
20 C.W.I.P Non-Land	(1)	3,357,654		100	3,896,643			3,896,643	3,896,712	20
21 M & S		536,611		100						21
22 Fuel Stock										22
23 **Total to Here (Taxable Unitary)**		62,105,999			91,976,299			76,492,454	49,586,629	23
24 Last Year		50,512,308								
25 Net A's & B's										
Misc Phys Property										
26 Land		27,292			Non-Op Land $41,450					
27 Non-Land		34,637	See V-563							
28 Total Misc. Phys. Property		61,929	See V-563							
29 Last year		126,335								
30 Net A's & B's		(64,406)								
Non-Taxable Property										
31 Licensed Vehicles		903,385								
32 Comm Office Trailer		39,313								
33										
34										
35										
36 Total Non-Taxable		942,698								
Other Adjustments										
37										
38										
39 TOTAL Summary Control		63,110,626								

Notes:
1 2,392,723 + 964,931 (Jan & Feb 1980)
2 155.5 x 1.15 = 178.7 (RCN study in 1977)
3
4
5
6

Value Indicated by H.C.L.D. 49,600,000

Appraiser AC Date 4/3/80

Reviewer DD Date 4/23/80

Estimated Market Value of Leased Property

Land
Other
Total

Expectancy 18

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INCOME APPROACH

In the demonstration appraisal, the company's most recent year's revenues and expenses are used as a basis for estimating future net income. If there were major fluctuations from year to year, prior years' revenues and expenses should also be considered. Adjustments should be made for rate increases that have been granted and for labor contracts that have been signed in the past calendar year. In the example no adjustments were made (see the earnings worksheet on page 30).

A working cash expense deduction is made on line 3 of the worksheet. The purpose of this expense is to provide for the cost of supplying funds to cover cash requirements during the interim between payment of expenses and collection of revenues. The working cash requirement is usually based on lead-lag studies made by the company. In this example the working cash requirement is estimated to be the equivalent of five percent of the operating expenses. The calculation is shown on the back of the worksheet.

The capitalized earning ability (CEA) of this property is determined by dividing the net income prior to deductions for depreciation, income taxes, and ad valorem taxes by the overall capitalization rate, i.e., the capitalization rate plus components for income and ad valorem taxes. The capitalization rate is the reciprocal of the present worth of one per annum factor for a given term at the basic band-of-investment rate. This basic rate is determined as explained in Chapter 2. The mathematical calculations for the income and ad valorem tax components are shown on the back of the earnings worksheet.

Two CEA calculations are made in this example. The difference in these calculations is in the computation of the income tax component. In one instance the income tax component is calculated based on straight line depreciation for income tax purposes; in the second case the component is calculated on the assumption that a prospective purchaser would be allowed by the Internal Revenue Service (IRS) to use accelerated depreciation on post-1969 assets.

After the income is capitalized (line 19), several additions and subtractions are made. Additions are made for taxable property that is part of the unit but which did not contribute to the income stream that was capitalized. Subtractions are made for property which did contribute to the income steam but is not taxable.

Materials and supplies (M&S) and construction work in progress (CWIP) for new plant that have not contributed to the income stream should be added to the capitalized income. In the absence of data identifying the M&S and CWIP for new plant, the amount of M&S and CWIP in excess of 1.5 percent of the RCN of the non-land tangible property is considered a reasonable estimate for the additive. The CWIP additive in this example is based on data provided by the company.

Another additive to the CEA is the present worth of the land reversion. The additive is the current price of the land (assumed to be the same at the end of the remaining life of the plant) discounted for the remaining life at the basic capitalization rate plus a rate for property taxes. The calculations are shown at lines 14-17, and the reversion is added at line 25.

Finally, there is a subtraction for nontaxable property. This is accomplished by dividing the historical cost of taxable operating property by the historical cost of total operating property and multiplying the result by the capitalized income. The adjustment is made at line 29.

STATE BOARD OF EQUALIZATION - VALUATION DIVISION

EARNING VALUE (OPERATIVE PROPERTY) - INTRASTATE COMPAINES

Company: JUNIPER TELEPHONE CO.   No. 299   Year 1980

OPERATING INCOME	Year Average	19___	19___	19___	19 79
1 Gross Operating Revenue					16,590,400
2 Operating Expense (Minus D, I & A.V.)					7,668,354
3 Working Cash Expense					56,554
4 Net before D, I & A.V.					8,865,492
5 Ad Valorem Taxes					525,535
6 Net before D & I					8,339,957
7 Depreciation					2,812,849
8					
9					
10					

Basic Capitalization Rate 14.75 %

11 Expectancy in Years	18		
12 Debt in Capital	60.00 %		
13 Debt Interest	13.75 %		
	%		

OVERALL CAPITALIZATION RATES

Cap. Rate	16.1000 %	16.1000 %
Income Tax	2.3338 %	1.7521 %
Ad Valorem Tax	1.1940 %	1.1940 %
Overall Cap. Rate	19.6278 %	19.0461 %

RCN NON-LAND TANGIBLE PROPERTY

(1.5 % = 1,316,017)

536,611

HISTORICAL COST

(a) Taxable Property	62,105,999
Non-Taxable Property +	942,698
(b) Total Operating Property =	63,048,697
% Taxable (a ÷ b) =	98.505 %

REVERSIONARY FACTOR

14 Basic Capitalization Rate	14.75 %
15 A.V. Rate	1.200 %
16 Total Rate	15.950 % Rounded 16%
17 Factor	0.069144 x Land Value 344,810 = Present Worth of Land Reversion 23,842

EARNING VALUE COMPUTATION			INCOME RATE — S/L DEP (FIT) 0.196278	INCOME RATE — ACCL DEP (FIT) 0.190461	INCOME BEFORE DEPRECIATION, INCOME TAXES & AD VALOREM TAXES — RATE
18 Net Operating Income			8,865,492	8,865,492	
19 Capitalized Earning Ability (CEA)			45,168,037	46,547,545	
20 Possessory Interest Income $					
21 Possessory Interest CEA at		(+)			
22 Average Inventory for Sale		(-)			
23 Materials & Supplies over		(+)	0	0	
24 CWIP (New Construction)		(+)	3,189,771	3,189,771	
25 Present Worth of Land Reversion		(+)	23,842	23,842	
26 Future Use		(+)			
27 Other		(+ or -)			
28 Total Earning Value (includes non-taxable property) =			48,381,650	49,761,158	
29 Earning Value - Taxable Property	98.505 %		47,658,344	49,017,229	
30 Adjustments					
31 Earning Value			47,658,344	49,017,229	

Abbreviations: CEA - Capitalized Earing Ability, CWIP - Contsrtuction Work in Progress, M&S - Materials & Supplies, D - Depreciation, i - Income Tax, A.V. - Ad Valorum Taxes

V-541-A REV. 7 (3-80)

CALCULATION OF CAPITALIZATION RATE INCREMENT FOR INCOME TAX

(INCOME TAX PER DOLLAR OF CAPITALIZED VALUE)

ADJUSTMENTS	I (1)	A (2)	$\frac{1}{L}$ (3)	B (4)	i (5)	(4) x (5) (6)	(2) – (3) – (6) (7)	(1) x (7) (8)	1.00 – (I) (9)	t (8) ÷ (9) (10)
S/L	.5042	.1610	.05550	.60	.1375	.0825	.02295	.011571	.4958	.023338
ACCL	.5042	.1610	.06127	.60	.1375	.0825	.01723	.008687	.4958	.017521

DEPRECIATION ADJUSTMENT — (3) Above

LIFE	BASIC CAP RATE	ADJUSTMENT (J FACTOR)	$\frac{1}{L}$	ADJUSTED $\frac{1}{L}$
18	14.75	1.1184	x $\frac{.05555 \times .87}{.05555 \times .13}$	= $\frac{.05405}{.00722}$ .06127 (To (3) above)

$$t = \frac{I\,(A - \frac{1}{L} - Bi)}{1.00 - I}$$

	1 YEAR	_____ AVERAGE
Net Before Depreciation and Income Taxes.....	8,339,957	
Less Depreciation.....	2,812,849	
Net Before Income Taxes.....	5,527,108	
Tentative Income Tax Base (80%)	4,421,686	
Tax Rate Per Tax Table =	.5042	

WHERE:

- t – Tax Per Dollar of Capitalized Value
- I – Income Tax Rate (Federal Plus State, for Intra-State Companies, Federal Only for Inter-State Companies).
- A – Capitalization Rate
- L – Life
- B – Percentage of Long-Term Debt in Capital Structure
- i – Interest Rate on Long-Term Debt.

WORKING CASH

1. Amount per Property Statement: 7,668,354
2. Adjustments: 5%
3. Allowable Working Cash (1 x 2): 383,418
4. Basic Cap. Rate: 14.750
5. Working Cash Expense (3 x 4): 56,554

Tax Rate: .011940

Last Year's Total Ad Valorem Tax: 550,506

Last Year's Market Value of Tangible Property: 46,126,360

Earning Value Indicator: *S/L* 47,658,344 *ACCL* 49,017,229

Appraiser: RC Date: 4/8/80

Reviewer: DG Date: 4/23/80

V-541-A BACK REV. 7 (3-90)

STOCK AND DEBT APPROACH

The first step in this approach is the valuation of the common and preferred stock and the long-term debt (see the stock and debt worksheet on page 33). Valuation is based upon the prices which are paid in the securities market. The data from more actively traded and widely held securities are presumably more accurate. If the securities are not traded, the validity of the approach is questionable. However, it is possible to use the method if some of the debt is not publicly held by estimating its value on the basis of the prices of comparable securities. It is also possible to use the method if a reasonable market price for the common stock can be developed.

The use of sales prices can be a problem since prices of securities usually fluctuate daily. Some experts believe the lien date price should be used; others feel an average of prices should be used. In this example, the average of monthly high and low prices for the previous calendar year is used in order to eliminate any unusual or temporary market reaction not related to the value of the property.

The value of current and accrued liabilities, with some exceptions, must also be included in the gross stock and debt value. Current liabilities represent short-term debt and are a source of money or credit which can be used for the acquisition of assets. Current liabilities are usually valued at book value. However, dividends declared but unpaid are a liability which is not included in the gross value because this value is already reflected in the stock prices.

Each one of the accrued liability accounts must be considered, and if it is a source of money or credit which can be used for the acquisition of assets which add to the value, it must be included in the gross stock and debt value. Some deferred credits may be worth less than book value. Each account must be considered on its own merits and a determination made as to whether it should be included in the gross stock and debt value.

If leased property is included as part of the appraisal unit, the value of such property must also be added to the gross stock and debt value. Leased assets are not part of the unitary property in this example.

Certain deductions are made from the gross stock and debt value. Deductions are itemized on page 2 of the worksheet. All deductions should be made at the value placed on the asset by the securities market because the gross value is based on the securities market. Current assets are deducted since these represent cash and special deposits and notes and accounts receivable which are nontaxable items. Prepayments are also deductible since no asset is on hand. Materials and supplies are deducted initially and added back on page 1 of the worksheet since they represent a part of the subject of the valuation. Other deferred charges are also deductible. In this example, book cost is presumed to be a good measure of the value of the deductible assets.

Company JUNIPER TELEPHONE CO. No. 299 Year 1980

STOCK-AND-DEBT VALUE (OPERATIVE PROPERTY ONLY)
TELEPHONE COMPANIES

Lien Date 3-1-80

IT. NO.	ACCT. NO.	ACCOUNT	REF.	BALANCE SHEET	MARKET VALUE
1	150	Capital Stock (outstanding) 1,322,140 @ $22.50 SHARE		6 713 435	29 748 150
2	151	Stock Liab. for Conversion			
3	152	Premium on Capital Stock		15 263 720	xx
4	153:1	Capt. Stk. Subs. (offsets 126)		32 640	32 640
5	153:2	Installments Paid on Cap. Stock			
6	154:1	Funded Debt (outstanding)		17 985 000	14 388 000
7	154:2	Funded Debt Subs. (offsets 127)			
8	155	Receivers' Certificates			
9	156	Advances from Affil. Companies			
10	157	Other Long-term Debt		2 700 000	2 160 000
11		Subtotal, Stock & Long Term Debt.		42 694 795	
12	158-163	Current Liabilities		1 904 531	1 904 531
13	166	Taxes Accrued		578 613	578 613
14	167	Unmat. Int., Div., Rents (portion)			
15	168	Premium on Long-term Debt			xx
16	169	Insurance Reserve			xx
17	170	Provident Reserve			
18	171	Depreciation Reserve		12 486 488	xx
19	172	Amortization Reserve			xx
20	173	Employment Stabilization Reserve			xx
21	174	Other Deferred Credits		8 364	4 182
22	176.1	Accum. Def. Inc. Taxes – Accel. Tax Depr.		3 203 000	3 203 000
23	176.2	Accum. Def. Inc. Taxes – Other			
24	179	Other Capital Surplus		2 277	xx
25	180	Earned Surplus Reserved			xx
26	181	Unappr. Earned Surplus		3 984 231	xx
27		Subtotal, Current & Other Liabilities		22 167 504	
28		Total – Stock, L.T. Debt, Curr. & Other Liab. (It. Nos. 11 and 27)		64 862 299	52 019 116
29		Less Deductible Assets			3 153 562
30		System Stock-and-Debt Value (excludes M. & S.)			48 865 554
		Adjustments			
31	100 %	to California			48 865 554
32	Less 98.5 %	to Exclude Motor Vehicles, Prop. on U.S. Land, Prop. in Leased Bldgs			48 132 571
33		Add Possessory Interest Value			
34		Add California Materials and Supplies Less California Goods Held for Sale or Lease			536 611
35		INDICATED VALUE – STOCK AND DEBT APPROACH			47 595 960

Appraiser RC Date 4-3-80

Appraiser _____ Date _____

Company JUNIPER TELEPHONE CO. No. 299 Year 1980

Deductible Assets Lien Date 3-1-80

TELEPHONE COMPANIES

IT. NO.	ACCT. NO.	ACCOUNT	REF.	BALANCE SHEET			MARKET VALUE			
1	100:1–100:7	Telephone Plant			61	547	155		xx		
2	101:1	Investments in Affil. Companies									
3	101:2	Advances to Affil. Companies									
4	102	Other Investments									
5	103	Miscellaneous Phys. Property				61	929			61	929
6	104	Sinking Funds									
7	105	Company Securities Owned							xx		
8	113-123	Current Assets			2	168	146		2	168	146
9	122	Material and Supplies (RED)				536	611			536	611
10	126	Subscriptions to Cap. Stock				32	640			32	640
11	127	Subscriptions to Funded Debt									
12	129	Prepaid Rents									
13	130	Prepaid Taxes									
14	131	Prepaid Insurance									
15	132	Prepaid Directory Expense									
16	133	Other Prepayments				9	983			9	983
17	134:1	Discount on Capital Stock							xx		
18	134:2	Capital Stock Expense							xx		
19	135	Discount on Long-term Debt				161	582		xx		
20	136	Provident Funds									
21	137	Insurance & Other Funds									
22	138	Extraordinary Maint. & Ret.							xx		
23	139	Other Deferred Charges				344	253			344	253
24		Total			64	862	299		xx		
		Other Deductions									
25											
26											
27											
28		TOTAL DEDUCTIBLE ASSETS							3	153	562

INTRASTATE ALLOCATION OF VALUE

The following is an example of the allocation of value for the telephone company in our illustration. Assume that the Board has fixed the market value of the taxable unitary property of the company at $50,000,000 and further assume that:

Allocated value of land is		$ 344,810
Cost of material and supplies is		536,611
Reproduction cost new less depreciation of the entire unitary property is		$76,492,454
Then:		
RCLD of unitary property		$76,492,454
Less: RCLD of land	$344,810	
RCLD of material and supplies	536,611	881,421
RCLD of unitary property excluding land and material and supplies		**$75,611,033**
Total value		$50,000,000
Less: allocated value of land	$344,810	
allocated value of material and supplies	536,611	881,421
Allocated value of unitary property excluding land and material and supplies		**$49,118,579**
Ratio of allocated value to RCLD = $**49,118,579** ÷ $**75,611,033**		**.649621**

Make the further assumption that the continuous structure portion of the company is made up of 3,700 exchange poles, 71,000 telephone stations, and 394,000 miles of aerial wire; and that the RCLD of the poles is $1,076,000, the RCLD of the telephone stations is $6,270,000, and the RCLD of the aerial wire is $27,354,465. Then, "Unit Allocated Values" are:

Exchange Poles	$1,076,000 x .649621 ÷	3,700	=	$188.92 each
Telephone Stations	$6,270,000 x .649621 ÷	71,000	=	$ 57.37 each
Exchange Aerial Wire	$27,354,465 x .649621 ÷	394,000	=	$ 45.10 per mile

Carrying out this example to what might be found in a specific tax-rate area (TRA), we find reported in rural Smith County, TRA 051-001, the following items:

Description	
Land	
Map 299-59-001 Par 1	$ 3,000
Improvements	
Jones Creek CO Bldg. (RCLD = $10,000 @ .649621)	6,500
Jones Creek COE (RCLD = $30,000 @ .649621)	19,490
Exchange Poles (15 @ $188.92 Ea)	2,830
Telephone Stations (25 @ $57.37 Ea)	1,430
Exch. Aerial Wire (1,600 Mi. @ $45.10/Mi.)	72,160
Personal Property	
Materials and Supplies	500
+ Furn. & Office Equip (RCLD = $1000 @ .649621)	650
Total Allocated Value for TRA 051-001	$106,560

Adding the total of each TRA in which property is located, we arrive at the total value, plus or minus a few dollars caused by rounding (all allocated values are rounded to the nearest ten dollars).

As evidence the above computation is correct, we make the following calculation:

Land Value	$ 344,810
Material and Supplies	536,610
Fixed Property (RCLD $40,910,570 @ .649621)	26,576,360
Continuous Structures:	
Exchange Poles (3,700 @ $188.92 Ea)	699,900
Telephone Stations (71,000 @ $57.37 Ea)	4,073,270
Exch. Aerial Wire (394,000 Mi @ $45.10/Mi)	17,769,400
Total	$50,000,350

It would be unusual for an actual allocation to add up to the exact total. A company with this value would probably be made up of nearly 600 items of property, each one of which is rounded to the nearest ten dollars. If the difference due to rounding is too great, minor adjustments can be made. Adjustments are usually made to continuous structures.

PROPERTY STATEMENT

The financial statement that the Board requires each assessee to file as part of the annual property statement furnishes most of the data upon which the unitary market value is based. It consists mainly of excerpts from annual reports filed with the California Public Utilities Commission, the Federal Energy Regulatory Commission, the Interstate Commerce Commission, and other regulatory agencies.

Briefly described, the financial statement consists of balance sheets, statements of capital or plant accounts, operating and other income, earned surplus, and other supporting schedules. Most of the major assessees file copies of their annual reports as well as completing the Board's prescribed financial statement. The following Schedules A through H and the Summary Control contain the data that was used in the preceding valuation and value allocation demonstration.

SCHEDULE A - Comparative Balance Sheet

BALANCE AT BEGINNING OF YEAR	**ASSETS**	BALANCE AT END OF YEAR	
$ 50,718,090.58	Plant and equipment	$ 61,547,154.68	
126,335.24	Miscellaneous physical property @	61,929.25	
	Investments in securities		
	Other investments		
	Sinking and other funds		
	Other utility plant		
273,288.49	Cash and working funds	582,631.44	
-0-	Temporary cash investments and special deposits	-0-	
	Notes receivable		
2,485,487.82	Accounts receivable	1,585,514.28	
	Interests, dividends, and rents receivable		
555,811.17	Material and supplies @	536,611.27	
	Inventory held for sale or lease in ordinary course of business @		
	Discount on capital stock		
149,607.20	Discount and expense on funded debt	161,582.66	
33,008.91	Prepayments	9,982.88	
319,282.22	All other deferred debits	344,252.98	
51,150.00	Subscriptions to Capital Stock	32,640.00	
54,712,061.63	TOTAL ASSETS AND OTHER DEBITS	64,862,299.44	
	LIABILITIES		
6,139,695.00	Capital Stock	6,713,435.00	
12,395,020.00	Premiums and assessments on capital stock	15,263,720.00	
15,960,000.00	Funded debt unmatured	17,985,000.00	
	Capital stock expense		
3,000,000.00	Other long term debt	2,700,000.00	
51,150.00	Capital Stock Subscribed	32,640.00	
	Loans and notes payable		
1,175,981.37	Accounts Payable	1,259,716.44	
	Matured interest and dividends		
208,980.44	Taxes accrued	578,613.34	
405,896.30	Customer deposits and advances	501,569.70	
2,982.44	Other current and accrued liabilities	2,982.44	
125,305.35	Accrued Interest	140,262.47	
	Premium on long term debt		
292,990.14	Depreciation reserve licensed vehicles @	360,003.55	(1)
9,937,386.93	Depreciation reserve other plant and eq. @	12,105,601.91	(2)
10,749.66	Depreciation reserve non-operating prop. @	20,882.73	(3)
2,585,000.00	Deferred income taxes	3,203,000.00	
	Other reserves		
	Employees' provident reserve		
1,471.15	Other deferred and unadjusted credits	8,363.97	
2,277.35	Capital Surplus	2,277.35	
2,417,175.50	Retained earnings	3,984,230.54	
54,712,061.63	TOTAL LIABILITIES AND OTHER CREDITS	64,862,299.44	

Reserves as of lien date: (1) $371,777.67 (2) $12,519,438.51 (3) -0-

V-517T (11-70) *@ Note – Interstate companies show California end-of-year amount in box.*

SCHEDULE B - Telephone Plant

	TELEPHONE PLANT IN CALIFORNIA	BALANCE BEGINNING OF YEAR	ADDITIONS	RETIREMENTS	BALANCE END OF YEAR
		$	$	$	$
201	Organization	300.00			300.00
202	Franchises	50.00			50.00
203	Patent rights				
207	Rights-of-way				
211	Land	416,208.14	1) 26,063.42		442,271.56
212	Buildings	7,507,685.52	1) 621,369.08	120.17	8,128,934.43
221	Central office equipment	15,152,166.12	5,563,723.25	1,197.00	20,714,692.37
231	Station apparatus	3,517,048.13	869,507.94	181,951.68	4,204,604.39
232	Station connections	3,757,213.64	1,252,239.37	424,544.23	4,584,908.78
234	Large private branch exchanges	526,632.04	202,720.54		729,352.58
241	Pole lines	587,892.94	39,742.19	18,770.95	608,864.18
242.1	Aerial cable	4,534,685.44	347,783.73	110,520.96	4,771,948.21
242.2	Underground cable	3,627,314.25	774,625.22	5,830.19	4,396,109.28
242.3	Buried cable	2,740,541.73	355,734.40	356.36	3,095,919.77
242.4	Submarine cable				
243	Aerial wire	110,404.32	12,446.45	8,995.43	113,855.34
244	Underground conduit	4,234,016.29	1,125,290.61	13.46	5,359,293.44
261	Furniture & office equipment	493,029.53	104,039.99	6,413.98	590,655.54
264	Licensed vehicles	761,594.09	141,790.51		903,384.60
	Other vehicles & work equip.	413,377.09	93,531.91		506,909.00
276	Telephone plant acquired				
277	Telephone plant sold				
100.1	Total plant in service	48,380,159.27	11,530,608.61	758,714.41	59,152,053.47
100.2	Telephone plant under const.	2,335,553.31	11,523,372.52	11,466,202.62	2,392,723.21
100.3	Prop. held for future tele. use	2,378.00			2,378.00
100.4	Telephone plt. acq. adjustment				
	Telephone plant in Calif.	50,718,090.58	23,053,981.13	12,224,917.03	61,547,154.68
	Telephone plant in other states				
	Total system	50,718,090.58	23,053,981.13	12,224,917.03	61,547,154.68

NOTES: 1) Transfer from A/C 103 26,063.42 / 38,342.57

2) CWIP at 12-31-79:

a) New $ 2,273,087.00

b) Replacement $ 119,636.21

V-517 REV. 2 (11-75)

SCHEDULE C - Telephone Operating Income

	ACCOUNT NUMBER	THIS YEAR $	LAST YEAR $
Operating Revenues			
Local service revenues		7,245,503.07	6,174,740.41
Toll service revenues		8,554,155.99	7,136,377.75
Miscellaneous revenues		971,472.98	854,588.97
Uncollectable revenues -- debit		(180,732.50)	(170,258.12)
Total operating revenues	300	16,590,399.54	13,995,449.01
Operating Expenses			
Maintenance expenses		2,555,389.68	2,059,579.97
Depreciation		2,812,849.06	2,376,401.83
Extraordinary retirements			
Amortization			
Traffic expenses		1,272,503.57	1,069,277.43
Commercial expenses		1,074,222.16	904,727.81
Gen'l office salaries and expenses		1,495,389.80	1,283,667.01
Other operating expenses		921,003.44	908,711.56
Total operating expense	301	10,131,357.71	8,602,365.61
Net operating revenues		6,459,041.83	5,393,083.40
Rent from Lease of Operating Property	302		
Investment Tax Credits, Net	304		
Federal Income Taxes - Operating	306	81,000.00	(118,000.00)
Other Operating Taxes	307	1,199,380.07	1,237,756.56
Income Taxes Deferred	308	444,000.00	500,000.00
Income Taxes Deferred Prior Year - Credit	309		
Telephone operating income		4,734,661.76	3,773,326.84

V-517T REV 2 (11-75)

STATEMENT E - Statement of Income and Retained Earnings

	THIS YEAR $	LAST YEAR $
Net operating income (from Schedule C)	4,734,661.76	3,773,326.84
Net income from other operations		
Other income		
Revenues from non-operative physical property	10,010.02	6,753.23
Other income	220,923.81	438,434.18
Total		445,187.41
Income deductions		
Depreciation on non-operative physical property	18,714.76	9,213.72
Taxes on non-operative physical property		
Other expenses on non-operative physical property	1,666.52	
Interest	1,802,083.99	1,475,207.97
Other income deductions	19,866.08	15,552.94
Total		1,499,974.63
Net income	3,123,264.24	2,718,539.62

STATEMENT OF RETAINED EARNINGS

Balance at beginning of year		2,417,175.50	2,610,376.88
Income balance, as above		3,123,264.24	2,718,539.62
Other credits (explain)			
Dividends declared		1,556,209.20	1,202,941.00
Other debits (explain)	5% stock dividend	-0-	1,708,800.00
Balance end of year		3,984,230.54	2,417,175.50

SCHEDULE F - Ad Valorem Taxes Levied on State Assessed Property in the Most Recent Board Roll

Show the combined total of the most recent county and city tax bills in each county. Do not include State levies on private (railroad) cars.

COUNTY	TOTAL LEVIED $	COUNTY	TOTAL LEVIED $	COUNTY	TOTAL LEVIED $
1. Alameda		21. Marin		41. San Mateo	
2. Alpine		22. Mariposa		42. Santa Barbara	
3. Amador		23. Mendocino		43. Santa Clara	
4. Butte		24. Merced		44. Santa Cruz	
5. Calaveras		25. Modoc		45. Shasta	
6. Colusa		26. Mono		46. Sierra	
7. Contra Costa		27. Monterey		47. Siskiyou	
8. Del Norte		28. Napa		48. Solano	
9. El Dorado		29. Nevada		49. Sonoma	
10. Fresno		30. Orange		50. Stanislaus	
11. Glenn		31. Placer		51. Sutter	
12. Humboldt		32. Plumas		52. Tehama	
13. Imperial		33. Riverside	249,638.48	53. Trinity	
14. Inyo		34. Sacramento		54. Tulare	
15. Kern		35. San Benito		55. Tuolomne	
16. Kings		36. San Bernardino	300,867.48	56. Ventura	
17. Lake		37. San Diego		57. Yolo	
18. Lassen		38. San Francisco		58. Yuba	
19. Los Angeles		39. San Joaquin			
20. Madera		40. San Luis Obispo		Total	550,505.96

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SCHEDULE G - Detail of Taxes Charged in Current Year

A. Taxes Based on Income	CALIFORNIA	OTHER	TOTAL
	$	$	$
Federal	525,000.00		525,000.00
State	324,000.00		324,000.00
Prior year items show year & account [1]			
Total taxes based on income	849,000.00		849,000.00
B. Ad valorem Taxes			
In operating revenue deductions	525,535.20		525,535.20
In non-operating property expense			
Charged to other accounts			
Total ad valorem taxes	525,535.20		525,535.20
C. Other Taxes			
Federal old age benefits	275,429.04		275,429.04
Federal unemployment insurance	12,838.73		12,838.73
State unemployment insurance	53,632.39		53,632.39
Payments to grantors of franchises			
Sales and use taxes	7,944.71		7,944.71
Miscellaneous			
Total other taxes	349,844.87		349,844.87
All taxes charged	1,724,380.07		1,724,380.07
D. Normalized Income Taxes [2]			
Federal-applicable to current year			
State-applicable to current year			
Total	1,827,000.00		1,827,000.00

[1] Show separately every adjustment which is applicable to some former year's tax. Specify the year to which it applies, and the account number through which it was effected.

[2] To be filled out if income taxes charged to expense (paragraph A above) are different from what they would have been if calculated in a "normal" manner; i.e., by the continued use of straight-line depreciation, without present or past amortization of defense facilities, present or past accelerated depreciation, or investment tax credit.

SCHEDULE H - Apportionment of Income to California

If the net income of Schedule E is attributable in part to physical property outside of California, the apportionment to California of the items indicated below should be reported. If more than one type of utility operation is involved, give the apportionment separately for each.

OPERATING INCOME (Specify nature of operation)	THIS YEAR $	LAST YEAR $
Operating revenues		
Depreciation		
Taxes assignable to operations		
Other operating revenue deductions		
Net operating income		
INCOME FROM NON-OPERATIVE PHYSICAL PROPERTIES		
Revenues		
Depreciation		
Taxes		
Other expenses		
Net income from non-operative physical property		

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STATE BOARD OF EQUALIZATION
VALUATION DIVISION

JUNIPER **TELEPHONE CO.#** 299

SUMMARY CONTROL YEAR 1979

ACCT NO.	ACCOUNT NAME	INDIVIDUAL ITEMS	DERIVATION OF UNIT COSTS	LAND	LICENSED VEHICLES	OTHER COSTS	TOTAL
201	Intangible Plant	$	$	$	$	$ 350.00	$ 350.00
211	Land & Rights-of-Way			442,271.56			442,271.56
212	Buildings	8,089,621.43			1)39,313.00		8,128,934.43
221	Central Office Equipment	20,714,692.37					20,714,692.37
231	Station Apparatus		3,941,816.62				3,941,816.62
232	Station Connections		4,584,908.78				4,584,908.78
234	Large PBX	729,352.58					729,352.58
241	Pole Lines		608,864.18				608,864.18
242.1	Aerial Cable		4,771,948.21				4,771,948.21
242.2	U.G. Cable		4,396,109.28				4,396,109.28
242.3	Buried Cable		3,095,919.77				3,095,919.77
242.4	Submarine Cable						
243	Aerial Wire		113,855.34				113,855.34
244	Conduit		5,359,293.44				5,359,293.44
261	Furn. & Office Equip.	590,655.54					590,655.54
264	Vehicle & Other Work Equip.	506,909.00			903,384.60		1,410,293.60
276	Tel. Plant Acquired						
231	Station apparatus in stock	262,787.77					262,787.77
	SUBTOTAL	30,894,018.69	26,872,715.62	442,271.56	942,697.60	350.00	59,152,053.47
100.2	Tel. Plt. Under Const.	186,233.60	2,206,489.61				2,392,723.21
100.3	Plt. Held for Future Use			2,378.00			2,378.00
100.4	Tel. Plt. Acq. Adj.						
103	Misc. Physical Prop.	34,637.31		27,291.94			61,929.25
122	Material & Supplies	536,611.27					536,611.27
--	Ret. Prop. Still in Pl.						
2)-	March 1, 1980 Update	508,206.94	456,723.76				964,930.70
	GRAND TOTAL	$ 32,159,707.81	$ 29,535,928.99	$ 471,941.50	$ 942,697.60	$ 350.00	$ 63,110,625.90

SBE FORM V-552 (12-73) 1) Licensed Commercial Office Trailer 2) To reflect net addition cost as of lien date.

APPENDIX 1
TREATMENT OF RAILROAD BETTERMENT ACCOUNTING IN THE INCOME APPROACH

The Interstate Commerce Commission (ICC) allows railroads to use a system of accounting known as retirement-replacement-betterment accounting (betterment accounting). Under this system of accounting, railroads include the costs of original track and roadbed installations in the asset accounts. Thereafter, only additional installations or betterments are charged to the asset accounts. Replacements are expensed to the point where a betterment exists, and then just the betterment portion is charged to the asset account. Capitalized betterment portions include only a portion of the material costs and do not include labor and overhead costs associated with installation.

Examples of betterment portions that would be capitalized are:

TIES

The excess cost of metal ties used in repairs of track over the cost to replace in kind wooden ties removed.

RAILS

The cost of excess in weight of heavier rails laid in replacement of lighter rails.

OTHER TRACK MATERIAL

The excess cost of heavier or improved "other track material" used in repairs of tracks over the cost of replacing in kind such material removed.

BALLAST

The excess cost of improved ballast used in renewals over the cost to replace in kind to the original height and width the ballast removed.

As a result of betterment accounting, major portions of the costs of replacement are charged to operating expense accounts.

California Administrative Code, Title 18, Rule No. 8(c) prescribes the method of calculating the income approach to value. The rule states that the amount to be capitalized is the net return, that the net return is the difference between gross return and gross outgo, and that gross outgo does not include amortization, depreciation, or depletion charges. Under a limited-life capitalization model, expensing of a capital outlay is the same as allowing 100 percent depreciation in the year of the outlay. Therefore, an adjustment must be made to net income to develop a net return before depreciation. The Western States Association of Tax Administrators Report of Committee on Railroad and Utility Valuation, states on page 167 of the 1971 printing that such an adjustment is necessary to arrive at earnings prior to depreciation. The 1971 report states:

> Under ICC Accounting Rules recovery of investment in track properties laid in replacement (usually accomplished by annual depreciation charges to operating expense under prescribed accounting rules for most regulated utilities) is made by writing off the total cost in the year of installation. These track materials laid in replacement are long-lived in nature and assessable to the same extent as original installation properties.
>
> Thus, in adding back annual depreciation expense to arrive at Earnings Prior to Depreciation on Schedule E-2, an amount should be imputed for track depreciation.

To make such an adjustment necessarily involves definitions of what is a capital expenditure, what is a repair, and what is considered maintenance. Here are some useful definitions:

Capital Expenditures - A repair or replacement is a capital expenditure if it adds to the productive capacity of the property or extends its useful life. Such an item should be capitalized and the cost recovered through depreciation allowances over the useful life of the asset.

Maintenance is defined as the keeping of property in efficient operating condition.

Repair is defined as the restoration of a capital asset to its full reproductive capacity without an increase in the previously estimated service life or capacity.

Clearly, a large portion of railroad expenditures in the Roadway Maintenance expense accounts extends the useful life and/or increases the capacity of the roadbed, and as such would be capital items under generally accepted accounting procedures used in industries other than railroads. Specialized audits of major railroads should be made to determine an estimate of the amount of operating expenses for track structure replacement that would normally be capitalized if ICC mandated retirement-replacement accounting (betterment accounting) were to be replaced with a ratable depreciation method. This kind of analysis will enable the appraiser to estimate the amount of depreciation that is currently included as operating expense in the financial statements of a railroad.

An analysis of ICC definitions may be helpful to develop general guidelines to determine what expenditures represent pure repair and maintenance versus capital improvements. For example, “The term ‘spot maintenance’... means repairs to track components during routine inspections, as opposed to programmed replacements aimed at upgrading the general condition of the tracks.”

Railroads can qualify for investment tax credit (ITC) on capital expenditures even if such outlays were expensed under betterment accounting practices. A review of a railroad’s activity in this area may be somewhat helpful, but that amount of expenditure qualifying for ITC is not a figure that can be used in determining the amount of “depreciation expense for track structure” included in the track expense accounts. Expenditures that qualify for ITC do not include all the expenditures that must be analyzed to determine capital expenditures.

One method of calculating an expense adjustment is to first make an analysis of the expense accounts for material, labor, and overhead. Next develop an estimate of the total amount of expenditures that would have been capitalized into the asset accounts if betterment accounting procedures were not used. This total can then be compared to the total amount of material expense in accounts 212 Ties, 214 Rails, 216 Other Track Material, and 218 Ballast. From this comparison a percentage can be calculated which, in turn, can be applied to the most current year's material expense in accounts 212 through 218; this amount should be used to adjust the net income to be capitalized.

The appraisal of railroads requires use of financial data recorded on the company's accounting records, published in their financial statements, and entered on reports they file with governmental agencies. The fact that this data may be recorded, published, and reported in full compliance with the requirements of the various regulatory agencies does not mean that the figures are usable without adjustment in the appraisal process. Accounting and finance is one discipline; appraisal is another.

APPENDIX 2
ESTIMATING REMAINING ECONOMIC LIFE

In a limited-life capitalization model, it is necessary to have an estimate of the remaining economic life (REL) of the assets under appraisal on the lien date. To the extent possible, the REL estimate should be based on factual data reflecting typical life patterns of those assets that make up the appraisal unit. In the case of most commercial properties, the appraiser typically uses the average life of the wasting asset that will last the longest, usually a building, as his REL estimate. Prorated replacement costs of short-lived assets necessary to maintain the income stream are then expensed from the income stream as replacement reserves. This kind of an estimate could be made for a utility or railroad, but because of the unique mix of asset types and the difficulty of estimating the precise timing and cost outlays of all future replacements, it is more reasonable to use a composite-life concept.

To estimate REL, a composite average service life is calculated on the basis of average service lives of all items weighted by the replacement cost new of all items. Weighting by cost measures the relative importance of the item. This weighted figure divided by total replacement cost new is the composite average service life. The composite service life is related to the composite condition percent. With this data, the remaining life is determined by a survivor curve. Here is an example of the calculations:

Average Service Life	RCN	RCLD	Average Service Life x RCN
10	$ 60,000	$ 36,000	$ 600,000
15	70,000	49,000	1,050,000
20	150,000	120,000	3,000,000
25	90,000	45,000	2,250,000
30	40,000	12,000	1,200,000
40	30,000	18,000	1,200,000
	$440,000	$ 280,000	$9,300,000

Composite Average Service Life = 9,300,000 ÷ 440,000 = 21.14 years.
Composite Condition Percent = 280,000 ÷ 440,000 = 63.64%

Expectancy or Remaining Life from Condition % Table (See Page 48)		
Average Service Life	**Condition %**	**Expectancy**
21	65	11
21	62	10

By interpolation the REL estimate will approximate 10.55 years. This estimate does not reflect an adjustment for present worthing. The REL estimate of the unitary assets has been determined by weighting for both the number of years and amount of investment, but in the capitalization process it is also necessary to take into consideration the effect of present worthing assets with different life expectancies. This effect may be provided for by rounding the expectancy downward and capitalizing the income on an annual basis. A 10-year REL estimate would be reasonable in this example. All estimates of remaining life involve some subjectivity. Attempts should be made to minimize this subjectivity.

EXPECTANCY IN YEARS AND CONDITION PERCENT AT 10%
FOR PROPERTY GROUPS WITH AVERAGE LIVES OF 1 to 80 YEARS

Average Life

AGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	AGE
1	0-16	1-50	2-66	3-74	4-80	5-84	6-86	7-89	8-90	9-91	10-93	11-93	12-94	13-95	14-95	15-96	16-96	17-96	1
2		0-16	1-37	2-51	3-61	4-68	5-73	6-77	7-80	8-83	9-85	10-87	11-88	12-89	13-90	14-91	15-92	16-93	2
3		0-3	1-17	1-32	2-44	3-53	4-60	5-66	6-71	7-74	8-77	9-80	10-82	11-84	12-85	13-87	14-88	15-89	3
4			0-7	1-17	2-29	2-40	3-48	4-55	5-61	6-66	7-70	8-73	9-76	10-78	11-80	12-82	13-84	14-85	4
5				0-9	1-18	2-28	3-37	4-45	4-52	5-57	6-62	7-66	8-69	9-73	10-75	11-77	12-79	13-81	5
6				0-3	1-11	1-19	2-27	3-35	4-43	5-49	6-54	6-59	7-63	8-67	9-70	10-73	11-75	12-77	6
7					0-6	1-12	1-19	2-27	3-35	4-41	5-47	6-52	7-57	8-61	8-65	9-68	10-71	11-73	7
8					0-2	1-8	1-13	2-20	2-27	3-34	4-40	5-46	6-51	7-55	8-59	9-63	10-66	11-69	8
9						0-4	1-9	1-15	2-21	3-27	3-34	4-39	5-45	6-50	7-54	8-58	9-61	10-65	9
10						0-1	0-6	1-11	1-16	2-22	3-28	4-34	4-39	5-44	6-49	7-53	8-57	9-60	10
11							0-2	1-7	1-12	2-17	2-22	3-28	4-34	5-39	5-44	6-48	7-52	8-56	11
12								0-4	1-9	1-13	2-18	2-23	3-29	4-34	5-39	6-43	6-48	7-52	12
13								0-1	1-6	1-10	1-14	2-19	3-24	3-29	4-34	5-39	6-43	7-47	13
14									0-3	1-7	1-11	2-16	2-20	3-25	4-30	4-34	5-39	6-43	14
15									0-1	0-5	1-9	1-13	2-17	2-21	3-26	4-30	4-35	5-39	15
16										0-2	1-6	1-10	2-14	2-18	3-22	3-26	4-31	5-35	16
17											0-4	1-8	1-11	2-15	2-19	3-23	3-27	4-31	17
18											0-1	1-5	1-9	1-12	2-16	2-20	3-24	4-28	18
19												0-3	1-7	1-10	2-14	2-17	3-21	3-25	19
20												0-1	0-4	1-8	1-11	2-15	2-18	3-22	20
21													0-2	1-6	1-9	2-13	2-16	2-19	21
22														0-4	1-7	1-10	2-14	2-17	22
23														0-1	1-5	1-8	1-12	2-15	23
24															0-3	1-6	1-10	2-13	24
25															0-1	0-4	1-8	1-11	25
26																0-2	1-5	1-9	26
27																	0-3	1-7	27
28																	0-2	1-5	28
29																		0-3	29
30																		0-1	30

Average Life

AGE	19	20	21	22	23	24	25	30	35	40	45	50	55	60	65	70	75	80	AGE
1	18-97	19-97	20-97	21-97	22-98	23-98	24-98	29-99	34-99	39-99	44-99	49-99	54-100	59-100	64-100	69-100	74-100	79-100	1
2	17-93	18-94	19-94	20-95	21-95	22-96	23-96	28-97	33-98	38-98	43-99	48-99	53-99	58-99	63-99	68-99	73-99	78-100	2
3	16-90	17-91	18-92	19-92	20-93	21-93	22-94	27-96	32-97	37-98	42-98	47-98	52.99	57-99	62-99	67-99	72-99	77-99	3
4	15-86	16-88	17-89	18-89	19-90	20-91	21-92	26-94	31-96	36-97	41-97	46-98	51-98	56-98	61-99	66-69	71-99	76-99	4
5	14-83	15-84	16-86	17-87	18-88	19-89	20-89	25-92	30-94	35-96	40-97	45-97	50-98	55-98	60-98	65-99	70-99	75-99	5
6	13-79	14-81	15-82	16-84	17-85	18-86	19-87	24-91	29-93	34-95	39-96	44-97	49-97	54-98	59-98	64-98	69-98	74-99	6
7	12-75	13-77	14-79	15-81	16-82	17-83	18-85	23-89	28-92	33-94	38-95	43-96	48-97	53-97	58-98	63-98	68-98	73-98	7
8	12-71	12-74	13-76	14-78	15-79	16-81	17-82	22-87	27-91	32-93	37-94	42-96	47-96	52-97	57-97	62-98	67-98	72-98	8
9	11-67	12-70	13-72	14-74	15-76	15-78	16-80	21-86	26-89	31-92	36-94	41-95	46-96	51-97	56-97	61-97	66-98	71-98	9
10	10-63	11-66	12-69	13-71	14-73	15-75	16-77	20-84	25-88	30-91	35-93	40-94	45-95	50-96	55-97	60-97	65-97	70-98	10
11	9-59	10-62	11-65	12-68	13-70	14-72	15-74	20-82	25-87	29-90	34-92	39-94	44-95	49-96	54-96	59-97	64-97	69-97	11
12	8-55	9-59	10-62	11-64	12-67	13-69	14-71	19-80	24-85	29-39	33-91	38-93	43-94	48-95	53-96	58-96	63-97	68-97	12
13	7-51	8-55	9-58	10-61	11-64	12-66	13-69	18-78	23-84	28-88	33-90	38-92	42-94	47-95	52-96	57-96	62-97	67-97	13
14	7-47	8-51	9-54	9-58	10-61	11-63	12-66	17-76	22-82	27-86	32-89	37-92	42-93	46-94	51-95	56-96	61-96	66-97	14
15	6-43	7-47	8-51	9-54	10-57	11-60	11-63	16-73	21-80	26-85	31-89	36-91	41-93	46-94	51-95	55-95	60-96	65-96	15

APPENDIX 3
LIMITED LIFE CAPITALIZATION METHOD

To convert income into value, some method of discounting future income is needed since value is the present worth of future benefits. No matter what method is selected, the mathematical result is a capital value that a prospective purchaser would be warranted to pay for the property producing the income. The method selected must provide for a yield or return on the contemplated investment and, if the income is produced by assets with limited lives, the method must likewise provide for a return or recovery of the investment.

The capitalization method used by the Board is based on the assumption that the future income will be a level annuity, i.e., a series of equal cash flows. The income will have a limited life since the assets producing the income are wasting. As explained in Chapter 2, the level of income capitalized is net income prior to allowing any expenses for income taxes, ad valorem taxes, debt interest, or depreciation; these components are included in the capitalization rate. Under this method, the portion of income allocated to taxes is constant while the portion allocated to yield and capital recovery varies. Taxes and yield have first call on income, and capital recovery is residual. No income amounts are assigned to a reinvestment program.

For example, assume the net income prior to taxes, debt interest, and depreciation is $1,000 per year, the allowance for income taxes is 2 percent, the allowance for ad valorem taxes is 1 percent, the basic band-of-investment yield rate (weighted for debt and equity) is 10 percent, and the remaining economic life is 10 years. The overall capitalization rate is the sum of 2 percent allowance for income taxes, 1 percent allowance for property taxes, and 16.27 percent[1] yield and capital recovery rate for a total rate of 19.27 percent. The capitalized value is equal to $1,000 ÷ .1927 or $5,189.

[1] The 16.27 percent rate is the reciprocal of the present worth of one per annum factor for 10 years at 10 percent. See Table 6 of Assessors Handbook Section 505, *Capitalization Formulas and Tables*, January, 1975, published by the California State Board of Equalization.

This method allocates income as follows:						
End of Year	**Total Income**	**Income Taxes (2%)**	**Property Taxes (1%)**	**Yield (10%)**	**Capital Recovery**	**Outstanding Capital**
						$ 5,189
1	$1,000	$ 104	$ 52	$ 519	$ 325	4,864
2	1,000	104	52	486	358	4,506
3	1,000	104	52	451	393	4,113
4	1,000	104	52	411	433	3,680
5	1,000	104	52	368	476	3,204
6	1,000	104	52	320	524	2,680
7	1,000	104	52	268	576	2,104
8	1,000	104	52	210	634	1,470
9	1,000	104	52	147	697	733
10	1,000	104	52	77	767	* 6
					$5,183*	

*Six dollars outstanding due to rounding

In the preceding example, the income stream is sufficient to return the capital amount a prospective purchaser would consider paying for the property together with a yield on that investment and allowances for anticipated income and ad valorem taxes. The capital recovery is purely a financial calculation; it does not involve the costs of replacing existing assets, nor does it assume funds will be set aside in a sinking fund. Capital recovery is on a periodic basis, and no assumption is made as to what the investor might do with this recovered capital. The method has the same characteristics of an amortizing loan involving principal and interest payments.

APPENDIX 4
WORKING CASH ESTIMATES

Working cash is the amount of cash needed by a utility or railroad to meet its operating expenses for the period during which the utility or railroad has provided services to its customers and has not yet been paid for those services. It is the amount of cash needed as a result of the lag in collection of revenues being greater than the lag in the payment of expenses.

Under the unit appraisal concept, working cash supplied by investors is necessary in order for the tangible property to operate and produce income. The loss of the investor's opportunity to earn interest on his cash devoted to the operation of the utility is a proper operating expense and should be treated as such in the income approach to value. California Administrative Code, Title 18, Rule No. 8(e) states in part:

> ...when income from operating a property is used, sufficient income shall be excluded to provide a return on working capital and other nontaxable operating assets and to compensate unpaid or underpaid management.

Application of this rule requires first making an estimate of the working cash needs of each state assessee. An amount for the expense deduction can then be determined by multiplying the working cash amount by an appropriate interest rate.

Major assessees periodically make detailed lead-lag studies for rate hearing purposes and to determine cash requirements resulting from the pattern of revenue collection and expense payment. The Board is of the opinion that such studies are the best means of measuring working cash requirements. An example of the application of a lead-lag study to determine working cash requirements for appraisal purposes is illustrated below.

Example of Lead-lag Analysis:				
Year 1981 1980 Reported Operating Expenses (000)			Normal Years Avg. No. of Day's Lag in Paying Expenses (B)	Weighted Average (Col A x Col B) (C)
Line No.	Type	Amount (A)		
1	Fuel	$900,500	29.51	$26,573,755
2	Purchased Power	200,000	45.00	9,000,000
3	Company Labor	195,200	11.00	2,147,200
4	Goods and Services	68,400	27.82	1,902,888
5	Pensions	26,000	27.00	702,000
6	Payroll Expense Tax	620	134.50	83,390
7	FICA Tax	11,120	11.10	123,432
8	Federal Unemployment Tax	400	74.21	29,684
9	State Unemployment Tax	1,820	76.10	138,502
10	Group Life Insurance	2,625	8.98	23,573
11	Total	$1,406,685	28.95(1)	$40,724,424
12	Average number of day's lag in the collection of revenues			(2) 45.50
13	Less the average number of days' lag in the payment of expenses			28.95
14	Excess number of days' lag in the collection of revenues over the payment of expenses			16.55
15	Total operating expenses			1,406,685
16	Working cash requirements resulting from the lag in the collection of revenues being greater than the lag in the payment of expenses (Line 14 x Line 15 ÷ 365)			63,783
17	Plus minimum bank balances (to avoid service charges)			500
18	Working cash provided by investors			64,283

(1) 40,724,424 ÷ 1,406,685 = 28.95

(2) Per company analysis

APPENDIX 5
INTERSTATE ALLOCATION PRACTICES

In California, interstate allocations of unitary values are made for some railroad, communication, and electric companies. In the case of railroads, the basic NATA formula with some minor modifications is followed. The modifications are:

- Undepreciated costs are used because the data are readily available and no allocations to depreciation are necessary.
- Rolling stock costs are excluded because they are an allocation.
- Miles of way and yard tracks have been included in the terminal factor to more accurately reflect terminal activity in California.
- Fixed weightings are assigned to the property, line haul, and terminal factors because the Interstate Commerce Commission no longer provides the expense data necessary to calculate the weightings.

RAILROADS

The allocation of the interstate railroad unit is based upon three factors with fixed weightings. The factors and weightings are:

- Property--Interstate Commerce Commission (ICC) cost of reproduction plus additions (As) and betterments (Bs) weighted 40%.
- Line-haul--revenue ton miles weighted 45%.
- Terminal--tons of freight originated and terminated weighted 15%.

The California proportion of the system value is determined from data obtained from the ICC. The data are used for calculating the percentages of California to system for property, line haul, and terminal activity. These percentages are multiplied by their respective weights, and the three products are added. The total is the allocation factor or percentage which, multiplied by the system value, equals the value allocated to California.

COMMUNICATIONS

According to the WSATA formula, communication companies are allocated on three basic factors with fixed, assigned weights. They are:

- Undepreciated historical cost weighted 75%.
- Operating revenues weighted 15%.
- Net operating income weighted 10%.

In many cases the revenue and income figures are allocations. Consequently, in accordance with the principle that an allocation should not be based upon an allocation, revenue and income figures are not used. Instead, the allocation is based upon the percentage of California-to-system undepreciated historical cost.

ELECTRICS

The WSATA formula for electric companies distributes value on the basis of undepreciated historical cost but modified by certain factors. Fixed weights are assigned to certain portions of the property. The factors and fixed weights are:

- Electric production facilities with weights of 75% for historical cost, 10% for kilowatt capacity, and 15% for kilowatt hours generated.
- Electric distribution with weights of 50% for historical cost, 10% for kilowatt hours delivered and sold, and 40% for revenues from these kilowatt hours.
- Remainder of plant with weight of 100% for historical cost.

These weights are multiplied by each respective percentage or California's production cost, kilowatt capacity and kilowatt hours generated, and distribution cost, kilowatt hours delivered and sold and revenues from kilowatt hours to the system's corresponding quantities. The products for production facilities and distribution facilities are summed, and these sums are multiplied by the percentages which production and distribution historical costs are of total cost. The two products are added to the percent common plant costs are to total costs. This sum is the allocation percent or factor for California. These calculations for an electric corporation are illustrated below and on page 55.

DERIVATION OF INTERSTATE ALLOCATION FACTORS FOR AN ELECTRIC CORPORATION

Production Facilities Percentages				
	Item (1)	**Total (2)**	**California (3)**	**All Other States (4)**
1	Cost (from Col. 2, 4, & 7, pg 55) (000)`	$68,378	$6,719	$61,659
2	Percent	100.00	9.83	90.17
3	Percent weighted 75%	75.00	7.37	67.63
4	KW Capacity	326,370	60,760	265,610
5	Percent	100.00	18.62	81.38
6	Percent weighted 10%	10.00	1.86	8.14
7	KW-H Generated (000,000)	1,944	432	1,512
8	Percent	100.00	22.22	77.78
9	Percent weighted 15%	15.00	3.33	11.67
10	Wtd % (Sum of lines 3, 6, & 9)	100.00	12.56	87.44
11	Adjusted % (Line 10 times 47.72% from Col. 3, pg.55.)	47.72	5.99	41.73

DERIVATION OF INTERSTATE ALLOCATION FACTORS FOR AN ELECTRIC CORPORATION

(Continued)

Distribution Facilities Percentages				
	Item (1)	**Total (2)**	**California (3)**	**All Other States (4)**
12	Cost (from Col. 2,4 &7, below) (000)	$41,363	$10,819	$30,553
13	Percent	100.00	26.13	73.87
14	Percent weighted 50%	50.00	13.06	36.94
15	KWH sold (Accts. 440-448) (000)	1,174,051	260,430	913,621
16	Percent	100.00	22.18	77.82
17	Percent weighted 10%	10.00	2.22	7.78
18	Revenue (Accts. 440-448) (000)	172,360	38,220	134,140
19	Percent	100.00	22.17	77.83
20	Percent weighted 40%	40.00	8.87	31.13
21	Wtd % (Sum of lines 14, 17, & 20)	100.00	24.15	75.85
22	Adjusted % (Line 21 times 28.86% from Col. 3, below.)	28.86	6.97	21.89

Property by accounts (Include. Leased Plant, if any)		**System**		**California**			**All Other States**		
	(1)	**Cost $(000) (2)**	**% of Total Cost (3)**	**Cost $(000) (4)**	**% of Total Cost (5)**	**Adj. % (6)**	**Cost $(000) (7)**	**% of Total Cost (8)**	**Adj. % (9)**
310-346	**Production Plant**	**68,378**	**47.72**	**6,719**	**4.69**	**5.99** 1/	**61,659**	**43.03**	**41.73** 1/
360-373	**Distribution**	**41,363**	**28.86**	**10,810**	**7.54**	**6.97** 2/	**30,553**	**21.32**	**21.89** 2/
350-359	Transmission Plant	27,031		6,601			20,430		
389-399	General Plant	3,885		718			3,167		
106-107	Constr. Wk. in Progress	1,610		730			880		
105	Plant Held for Future Use	33		-					33
100.6	Plant in Proc. of Reclassif.	-	-		-				-
151-154	Mat. & Sup. (Elec. Dept.)	992		150			842		
_____	Common Plant (Alloc. to Elec.)	-		-	-		-	-	
	Subtotal	**33,551**	**23.42**	**8,199**	**5.72**	**5.72**	**25,352**	**17.70**	**17.70**
	TOTAL	**$143,292**	**100.00**	**$25,728**	**17.95**	**18.68**	**$117,564**	**82.05**	**81.32**

1/ From line 11, page 54

2/ From line 22, above

APPENDIX 6
TAX AREA MAPPING SYSTEM

ORIGIN

When the Board was given the responsibility of assessing all the public utility and railroad property in the state, a formidable barrier was the preparation of a tax roll that would successfully cope with the mass of "continuous structures" such as railroad track, wire, pipelines, and the like. At that time the law requiring that a tax roll show assessments in each city and taxing district was satisfied on the local rolls by stamping the names of cities and districts on the roll pages. This method simply would not work for the Board Roll.

A system now called the tax-rate area system was devised. It is used by all counties of the state except for Los Angeles (where a similar system is used), and it admirably solved the problem. The system consists of assigning a meaningful number to every geographical area in the state in which there is a unique combination of overlapping tax levies. State assessees report their property segregated to these numbered tax-rate areas, and the property is so assessed on the Board Roll. The portion of the roll pertaining to each county is delivered to each county auditor in August. The county then collects the taxes from the state assessees and distributes them to the cities and districts. No revenue accrues to the state in this process. The maintenance of the system is performed by the Tax Area Services Section of the Board's Valuation Division.

DESCRIPTION

TAX-RATE AREA MAPS AND CHARTS

Each county is depicted on a set of base map tracings. The "geography"-streets, section lines, tract boundaries--are drawn in reverse on the back side of the maps. Map scales vary from one mile to the inch in rural area to 400 to 600 feet to the inch in urban areas. On the front side of the tracings are shown the outlines and numbers of the tax-rate areas. This technique permits altering the tax-rate areas without having to redraw the geographical data. The identity of the taxing jurisdictions cannot be learned from the maps alone. The tax-rate area charts are used to gain this information. At the end of this appendix is a sample section of a tax-rate area map and chart. It should be noted that only the significant digits of the tax-rate area number appears on the maps, while the entire number is shown on the charts.

REVENUE DISTRICTS

Section 122, Revenue and Taxation Code defines "revenue district" as including every city and district for which the county officers assess property and collect taxes or assessments. Between 1957 and 1977 the number of revenue districts grew from 4,985 to 6,063. Many districts are divided into zones or have subsidiary improvement districts. The system must also reflect divisions within cities and districts due to varying levels of bonded indebtedness. In addition to this, the boundaries rarely coincide. All of the foregoing results in there being many more tax-rate areas than there are revenue districts. In the same period mentioned above, 1957-1977, the number of

tax rate areas rose from 13,602 to 26,873. Because of legislation stemming from Proposition 13, the number of tax-rate areas jumped from 26,873 to 30,358 between 1978 and 1980.

ELECTRONIC DATA PROCESSING OF TAX-RATE AREA NUMBERS

Tax-rate area numbers are decimal in nature and are very easily adapted to electronic data processing. They consist of two groups of three digits each. The first group is called the "primary" part of the number. Each county is divided into primary areas consisting of incorporated cities and elementary or unified school districts lying outside of cities. In most counties, the cities are numbered from 1 to 50. In Los Angeles County, the cities are numbered from 200 to 399. The "outside" elementary or unified school districts are numbered from 50 up. On the tax-rate area maps, primary numbers appear as open-face numerals. When primary areas are divided by the boundaries of special districts (fire protection, mosquito abatement, flood control, etc.) "secondary" areas are created. Three digits are available for designating secondary areas, thus permitting 1,000 possible combinations within each primary area.

To handle some cities, the secondary numbers have available a two-digit decimal suffix. The city shown on the sample map and chart is numbered to illustrate such a situation. All of the assessed values in the Board Roll are listed in tax-rate area number sequence and can be furnished to the county auditors on magnetic tape or punched cards. The tax rates for each revenue district are extended and the tax bills prepared by computer. The county assessment roll is arranged using the same system and the two rolls are thus completely compatible. Los Angeles County uses a four-digit coding system, so conversion listings are necessary for that county.

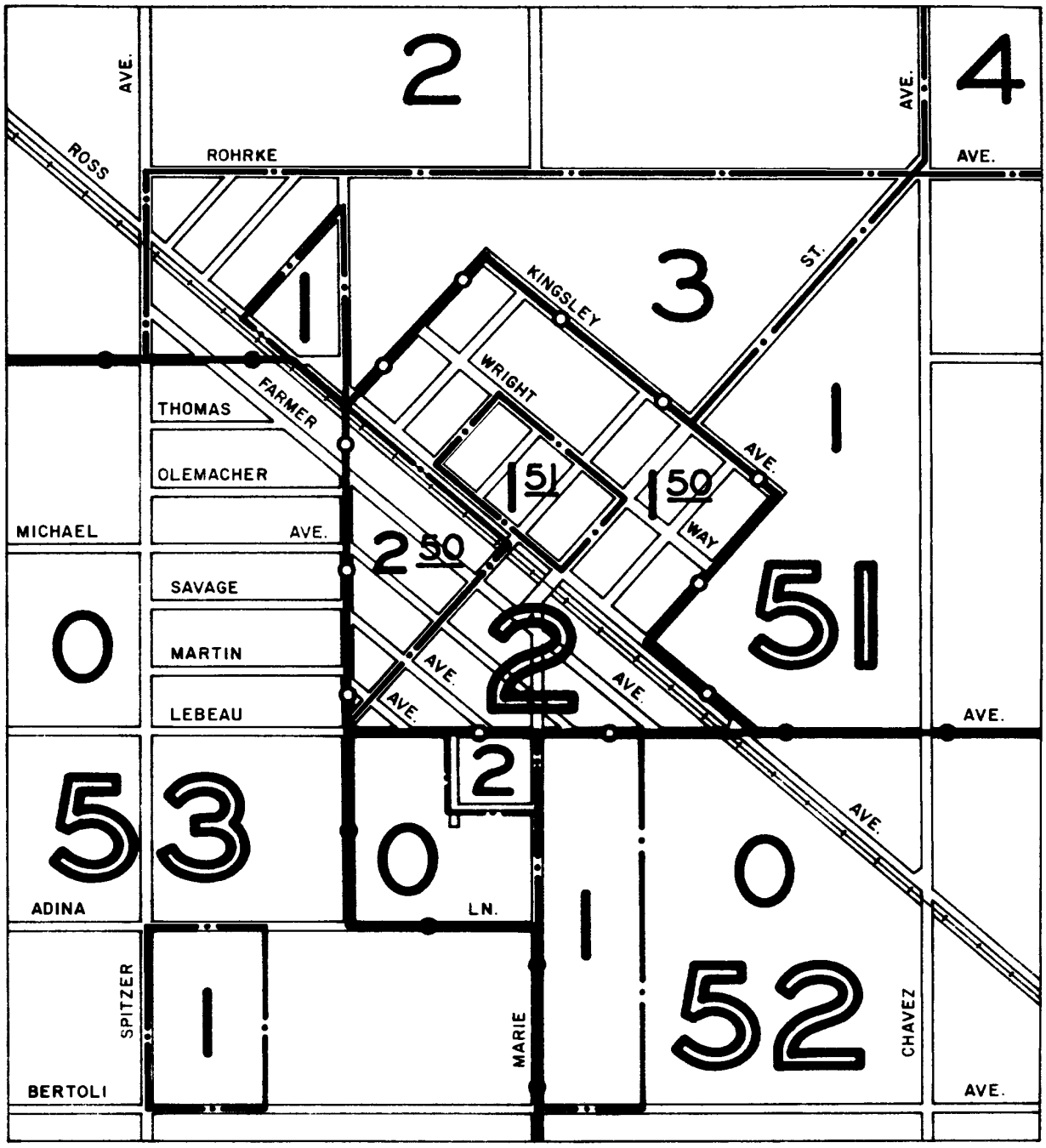
USE OF TAX-RATE AREA MAPS

Tax-rate area maps and charts are furnished at cost to the county assessors and to any other official and state assessee who wishes to use them. State assessees are required to inventory their property by tax-rate area, so the larger assessees all subscribe to the map service. Some smaller assessees send representatives to use our office copies. Each year the map service subscribers are provided with prints of maps and charts that reflect the boundaries as they existed on the preceding January 1st.

An average of 2,570 filings are received each year. As the new or changed boundaries are transformed into tax-rate areas, worksheets identifying the coding changes, together with prints of the maps that were affected, are mailed to the map users.

CHARGES FOR SERVICES

Prior to 1968, tax-rate area maps with revision service were furnished free of charge to county assessors. State assessees were charged only out-of-pocket expenses for reproducing the maps. The Legislature decided that the county assessors and state assessees should bear the entire cost of maintaining the system. The limited number of map users did not produce sufficient revenue, so an additional source was needed. In 1970 a schedule of fees to be charged to the cities and districts for processing their boundary changes was instituted. The charges for map service and the processing fees cannot exceed the reasonably anticipated cost of performing the work to which they relate.



SAMPLE TAX-RATE AREA MAP

KEY TO MAP SYMBOLS

5 Primary Number

3 Secondary Number

150 Secondary Number-underlined portion

Elementary or unified school district boundary outside of incorporated cities

City boundary

"Primary" lines

All other boundaries ("Secondary" lines)

TAX-RATE AREA CHART FOR BOARD R

PREPARED BY THE CALIFORNIA STATE BOARD OF EQUALIZATION TO

For Explanation of Abbreviati

COUNTY OF UPTOPIA YEAR

TAX-RATE AREA NUMBER			PRIMARY NUMBERS INDICATE INCORPORATED CITIES, ELEMENTARY OR UNIFIED SCHOOL DISTRICTS SECONDARY NUMBERS INDICATE FURTHER SUBDIVISIONS	ROAD DISTRICT	DISTRICTS																				CIT	
					Elem Sch Inside				High School																	
PRIMARY	SECONDARY FOR COUNTY ROLL ONLY	SECONDARY FOR CITY ROLL ONLY						Oleander			Spruce Union				California Hwy Light			Co Service Area #1	" -ZnA			Webster Sewer Maint.		Alder City Parking	
			CITY																							
2	001	.50	Alder City								X															
	001	.51									X														X	
	002	.50						X			X															
			SCHOOL																							
51	001		Birch	1							X															
	002			2							X				X											
	003			1							X				X											
	004			2							X															
52	000		Hemlock	1							X															
	001			1							X						X									
	002			1							X						X	X								
53	000		Oleander Cut	1							X															
	001			1							X												X			

GLOSSARY OF TERMS USED IN THE VALUATION OF CENTRALLY ASSESSED PROPERTY FOR AD VALOREM TAX PURPOSES*

Accelerated depreciation refers to methods of accruing greater depreciation expense in the early years of a property's life and less in the later years. Two methods of accelerated depreciation are (1) sum of the years digits and (2) declining balance. (See Section 167, Internal Revenue Code.)

Accrued Depreciation is the amount of depreciation to date; when recorded as a dollar amount may be deductible from total plant value or investment to arrive at the rate base.

Allocation to states refers to the process of assigning a portion of a unit value or system statistic to a state.

Allowance for funds used during construction is the process of capitalizing interest expense on funds used during the construction period. Since property does not generate earnings during construction, the capitalized interest expense represents imputed earnings. The capitalized interest becomes part of the total cost of the project.

Amortization is the orderly writing off of an investment by making periodic charges against current income. Also refers to the orderly retirement of an obligation by making periodic payments to the creditor.

Annuity refers to a series of payments to be made at equal intervals; annual, monthly, or other. The payments themselves do not have to be equal. An annuity whose payments are equal is known as a level annuity.

Apportionment to intrastate jurisdiction refers to the process of assigning a portion of a state value or state statistic or company statistic to geographical areas, usually tax levying districts or tax-rate areas within the state.

Assessment ratio is the relationship of assessed value to market value or to some statutory value; such as, actual value, true cash value, etc.

Band-of-investment is a method used to compute a capitalization rate in the absence of market information. The simplest form of band-of-investment computation requires estimating the appropriate debt/equity ratio, the interest cost of debt, and, typically, the most subjective element, the rate of return on equity capital. The weighted rates on debt and equity are added to obtain the band-of-investment rate.

Bond discount is a dollar discount of the face value of a bond due to a market discount rate greater than the coupon rate.

Bond premium is a dollar increment greater than the face value of the bond due to issuing costs or a market discount rate less than the coupon rate.

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* Adapted from the 1977 Addendum to Western States Association of Tax Administrators Report of Committee on Railroad and Utility Valuation 1971.

Bond rating is a classification assigned by financial reporting institutions reflecting relative standings as to risk. The classification may include consideration of management, revenue prospects, regulatory climate, operating costs, and many other aspects of business operations.

Book depreciation is the total accruals recorded on the books of the owner of property summarizing the systematic and periodic expenses charged toward amortizing the investment of limited-life property over its expected life.

Book value is the cost of a property as carried in the accounting records of the owner less the accrued depreciation reserve for that property. Also referred to as "net book".

Capital structure refers to the manner in which an organization is financed, that is, the amount and kind of equity and debt that satisfies the need for funds.

Capitalization process is the conversion of a stream of income having a certain duration into value by means of a capitalization rate that recognizes the degree of risk as between the property and the income it produces.

Capitalization rate is a factor, used as a divisor, which converts an income stream into an indicated value. If the income stream is expected to be of limited duration, a recapture component must be included in the capitalization rate.

Cash equivalent is the market value of a property expressed in terms of cash.

Cash flow is the sum of depreciation (and depletion, if any) and net income after all expenses, all taxes, and interest on debt. Conversely, it is gross income minus operating expenses, interest on debt, property taxes, and income taxes. Also known as net cash flow or after-tax cash flow.

Cash flow, before-tax is cash flow plus income taxes. When applied to "cash flow", the term "before-tax" refers only to income taxes.

Certificate of convenience and necessity is a grant of authority from a state or federal regulatory commission authorizing a company to render a public utility service, usually specifying the area and other conditions of service.

Common carrier is an individual, corporation, or entity engaged in transporting persons, goods, or messages for compensation over a regular route, on a certain schedule, or at a published rate, all of which are usually subject to government regulation.

Compound interest and annuity tables are six sets of factors (or coefficients) that embrace the fundamentals of the mathematics of finance. The various factors are here called Present Worth of 1, Present Worth of 1 per Annum, Future Worth of 1, Future Worth of 1 per Annum, Sinking Fund, and Mortgage Repayment.

Debt is money owed. In the usual case, borrowed money (debt) is considered to be a permanent part of the capital used in the business.

Deferred federal income taxes result from the use of accelerated depreciation or accelerated amortization that allows larger depreciation accruals and lower income taxes during the early years and higher taxes later on, other things remaining equal. Such a procedure defers to later years the payment of income taxes otherwise payable during the earlier years under the straight-line method. Liberalized depreciation can produce a similar result.

Depreciation in an appraisal sense is the loss in value of an item from all causes. Sometimes it is meant to be physical deterioration, but in a strict sense it would include functional and economic obsolescence as well.

Earnings-price ratio is the ratio of earnings per share available to common stockholders of a specific company for an accounting period to the market price per share of the common stock of that company. (See Price-Earnings Ratio)

Economic life is the useful life of a property, in contrast to its physical life which could be greater.

Economic rent is the rent currently and typically found in the open market.

Effective rate of interest is the total cost to a company for borrowing funds divided by the face value of the funds. The interest expense plus cost of floating the debt or compensatory bank balance are included in calculating the total cost.

Equity is the term used to denote the owners' interest in the business. In monetary terms, it is the amount of money the owners have invested in common and preferred stock plus earnings of the business that have not been paid out as dividends.

Expense is the gross dollars periodically paid for materials or services. Operating expenses mean direct and incidental expenses in carrying on the primary business, e.g., expenses of an electric utility in producing electric revenues.

Fair return is an amount of income authorized by a regulatory agency which is considered sufficient for a utility to attract necessary additional capital while at the same time rendering adequate service.

Fixed expenses are those expenses of a business enterprise which do not vary in relation to changes in volume of output, such as interest on borrowed funds, insurance, rent, property taxes or depreciation in some instances.

Flow-through accounting is the practice of charging to the current period only those expenses incurred during the period. A common example is the lesser income tax expense in a given period, due to the use of accelerated depreciation methods or guideline lives in contrast to straight-line depreciation or normal service lives, which would benefit the consumer in the form of lower cost of service if prescribed by the regulatory agency. (See Normalization Accounting.)

Form 10-K report refers to an annual report to the Securities and Exchange Commission. A new schedule therein requires certain large corporations to report the replacement cost of their productive capacity, the depreciated replacement cost, and the annual depreciation expense as though it were on a replacement cost basis.

Forms R-1 and R-2 are the annual reports of business operation filed with the Interstate Commerce Commission by Class I railroads (operating revenues of $50,000,000 or more) and Class II railroads (operating revenues less that $50,000,000) respectively.

Fractional method of valuation means valuing each individual item of property.

Franchise is a grant by a government agency authorizing the sale of product or service in a prescribed geographical area.

Functional obsolescence refers to loss of service usefulness or obsolescence due to technological advances or social requirements.

Generally Accepted Accounting Principles (GAAP) are those procedures adopted and endorsed by the Financial Accounting Standards Board to which auditors certify when filing an audit report.

Gross additions are new properties added to existing plant or improvements in form of betterments added to existing properties, usually reported in dollar amounts.

Gross income is the total amount of income received for the goods or services provided. It is frequently synonymous with the terms gross earnings, gross revenues, operating revenues, etc.

Historical cost is the original costs of a property item regardless of the present owner or interim sale transactions. It usually refers, in utility properties, to the cost of a property item when first devoted to public service.

Imbedded debt cost refers to the average rate of interest that a company pays for its long-term debt. Basically it is the amount of total interest paid on long-term debt during the year divided by the face value of the long-term debt outstanding at year-end.

Income is money or other benefits stemming from the ownership of property, generally received on a regular monthly or annual basis. The word “income” used alone has no specific appraisal significance, but must be qualified -- e.g., Gross Income, Net Operating Income.

Income approach to value is the method of appraisal that involves the analysis of incomes and expenses of income-producing properties and the use of the capitalization of income to produce property value indicators.

Indicator of value is a conclusion of the worth, expressed in dollars, of a specifically identified item of property (be it a single parcel of land or piece of equipment or an extensive corporate conglomerate) based upon consideration of particular characteristics or attributes of that property. Among the most common indicators of value are those derived from cost, income, and comparable sales.

Interest rate is a promised, typically contractual annual percentage rate paid on debt such as mortgage note or a contract. Interest is the cost of borrowing money.

Investment tax credit is a federal income tax incentive intended to encourage capital investment. It is a permanent forgiveness of income tax liability through direct reduction of tax liability for the year in which it is utilized. The amount of tax credit has varied, but it is a percentage of investment in qualified plant, with limits for the amount of tax reduction including carry-back or carry-forward features.

Inwood (factor or method) is the conversion of equal periodic payments into a present value; it is used to determine the present value of future earnings. Those earnings are capitalized by using the same yield rate for both the return **on** and the return **of** the investment.

Liberalized depreciation is use of rates of depreciation on property for income tax purposes that amortizes the investment over a shorter time period than its actual useful life. (See Revenue Proceedings 72-10 IRS.)

Main track refers to the lines or routes of a railroad, whether main line or branch line, as distinguished from yard track, side track, or passing track.

Market value is the amount, in dollars, for which a specific item of property could be sold by a willing seller and be bought by a willing buyer, assuming an arm's-length transaction and reasonable exposure to the market.

Net additions are the gross additions less the retirements, usually reported in dollar amounts.

Net operating income (NOI) is the residual from gross income less operating expenses and income taxes, but before the deduction of debt interest or recapture of capital. In property tax appraisal, NOI is at a level before deducting property taxes as an expense.

Normalization accounting is the practice of charging to the current period those expenses related to the current period rather than to the period in which actually incurred. A common example is the computation and assignment of income tax expenses to a period based on a straight-line depreciation method rather than on some accelerated depreciation method actually used. The income tax expense computation may or may not have included the additional variable of normal lives versus allowable guideline lives. (See Flow-Through Accounting.)

Obsolescence is the lessening of value from causes other than physical and may be functional where circumstances internal to the property item render it less desirable; or economic where circumstances external to the item and beyond the control of the owner render the property item less desirable.

Original cost is the cost of a property item to the present owner. At times, it is used as equivalent to historical cost.

Possessory interest is a type of ownership or partial ownership of the total fee. In valuation it is frequently encountered where government property is rented or leased to a taxable occupant.

Present worth is the value today of something to be received in the future. It is usually calculated by a discounting process that takes into consideration the time-interest concept of money's worth.

Price-earnings ratio is the ratio of the market price per share of the common stock of a specific company to the earnings per share of common stock of that company during a 12-month period. Typically, the ratio is based upon the current market price and the most recent 12-month period for which earnings are known.

Rate base is the dollar amount established by a regulatory agency upon which a return is allowed.

Rate of capitalization is a ratio of income to value. Such a rate can vary widely in "quality" depending upon the elements that are included; such as, interest, recapture, ad valorem taxes, and income taxes.

Rate of performance refers to the actual income earned compared to an investment, in contrast to a rate of return allowed or permitted but not necessarily accomplished.

Rate of return is a **general** term that may refer to the yield to an investor, variously on his net investment or on the property value. It may be the ratio of either the Net Operating Income or the Before-tax Cash Flow to the total property value, the initial investment, or the average investment during a given period.

Recapture, generally speaking, is the retrieval of a capital investment. More specifically, recapture is the portion of the net operating income or the cash flow that provides for the periodic repayment of invested capital. Recapture may also be achieved, wholly or in part, through resale of the property. The words depreciation and amortization are sometimes used as synonyms for recapture. However, depreciation is also both an accounting term and a word that means a loss from original value, and amortization is commonly used to signify debt retirement. Recapture has no such multiple meanings, and is therefore more desirable for use in income appraisal.

Regulatory lag is the time intervening between the initiation of a proceeding before a commission and the effective date of the final decision or disposition of the case.

Remaining economic life (REL) is the difference between total estimated economic life and the present effective age of an income-producing property.

Replacement cost is the cost of acquiring or constructing at current prices a property which is the functional equivalent of an existing property.

Reproduction cost is the cost of acquiring or constructing at current prices a property identical to an existing property.

Retirement depreciation is a method of accounting for the total depreciation expense at date of retirement rather than by systematic additions to a depreciation reserve during the life of the property.

Return on equity is the ratio of earnings on common equity divided by the value of the common equity interests.

Revenue is the gross dollars received for materials furnished or service rendered. Operating revenue means revenue from the operations of the primary business, e.g., electric revenues of an electric utility.

Risk is the degree of uncertainty regarding the receipt of future income, whether in the form of interest or of net operating income. The higher the risk, the greater the annual percentage rate of return demanded by investors. Interest on a government bond or on a bank deposit has a high degree of **certainty** of receipt, and therefore offers a low rate of return compared to other investments. At the other extreme is the high-risk equity portion of a commercial enterprise with a high debt/equity ratio.

Sinking fund is a fund to which periodic cash deposits are made for ultimately repaying a debt or replacing an asset. Usually, a sinking fund receives equal periodic deposits upon which interest is compounded at a stated rate so that the fund will accumulate to a predetermined amount at the end of a stated period.

Straight-line depreciation is the accounting practice of equal annual increments of book depreciation expense; or the assumed equal annual increments of loss in value in appraising where an allowance for depreciation is included in the capitalization rate.

Summation method of valuation is the combining of fractional valuations into one value; for example, the addition of a house value to the lot value to produce a total residential value.

System is an integrated operation of units which may be related entities or may be property elements such as machinery, buildings, land, and other property used in the performance of service(s) or manufacture of product(s).

Times interest earned is the ratio of earnings (before interest expense) to the interest expense. The factor is an element used in determining risk by the purchaser of debt issues of a company. Generally, the lower the factor the greater the risk. Also called interest coverage, it may be the ratio of earnings before interest and income taxes to interest expense.

Uniform system of accounts is a prescribed method of accounting adopted by a state regulatory agency, such as a Public Utilities Commission; or by a federal regulatory agency, such as the Civil Aeronautics Board, the Federal Communications Commission, the Federal Energy Regulatory Commission, or the Interstate Commerce Commission.

Unit method of valuation is the technique of valuing a group of property items as "one thing."

Variable expenses are those expenses of a business enterprise which vary with changes in volume of output, such as outlays for fuel to generate electric power.

Yield to maturity is a computation of the average rate of return on outstanding debt issues taking into consideration current price, interest payments, and capital gains or losses at maturity of the issue. While this can be computed manually, tables are available to show the yield on issues to maturity including the gain or loss on face value at maturity.